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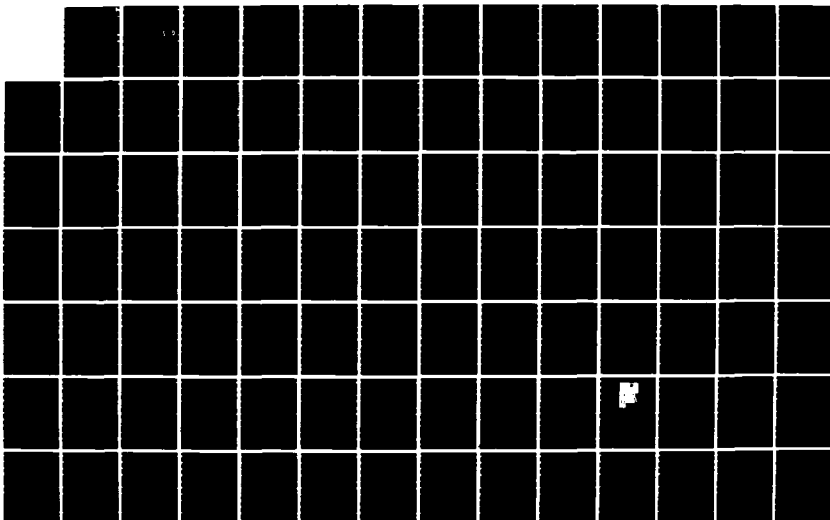
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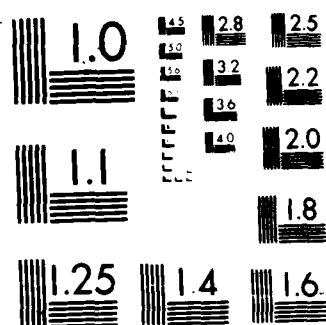
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EFFECTS OF ATROPINE AND 2-HAM CHLORIDE ON VISION AND PERFORMANCE

Annual/Final Report

Arthur Jampolsky, M.D.
Gunilla Haegerstrom-Portnoy, O.D., Ph.D.
Anthony J. Adams, O.D., Ph.D.
Reese T. Jones, M.D.

May 31, 1986

Supported by

U.S. ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND
Fort Detrick, Frederick, Maryland 21701

Contract No. DAMD17-83-C-3198

The Medical Research Institute of San Francisco
2200 Webster Street
San Francisco, CA 94115

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Dist	Avail and/or Special
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REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited		
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)					
6a. NAME OF PERFORMING ORGANIZATION The Medical Research Institute of San Francisco		6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION		
6c. ADDRESS (City, State, and ZIP Code) 2200 Webster St. San Francisco, CA 94115			7b. ADDRESS (City, State, and ZIP Code)		
8a. NAME OF FUNDING / SPONSORING ORGANIZATION U.S. Army Medical Research & Development Command		8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DAMD17-83-C-3198		
8c. ADDRESS (City, State, and ZIP Code) Fort Detrick Frederick, MD 21701-5012			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO. 63764A	PROJECT NO. 3M4- 63764D995	TASK NO. AA
			WORK UNIT ACCESSION NO. 051		
11. TITLE (Include Security Classification) Effect of Atropine and 2-PAM Chloride on Vision and Performance (U)					
12. PERSONAL AUTHOR(S) Arthur Jampolsky, M.D.; Gunilla Haegerstrom-Portnoy, O.D., Ph.D.; Reese Jones, M.D.; Anthony J. Adams, O.D., Ph.D.					
13a. TYPE OF REPORT Annual/ Final Report *		13b. TIME COVERED FROM 83/09/1 TO 86/05/31		14. DATE OF REPORT (Year, Month, Day) 86 May 31	
				15. PAGE COUNT 323	
16. SUPPLEMENTARY NOTATION *Annual for the period 1 Sep 85-31 May 86 and 1 Sep 84-31 Aug 85 Final for the period 1 Sep 83-31 May 86					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP			
06	15		Atropine, 2-PAM Cl, combination doses, time course, human,		
06	20		BLASER tracking performance, hand-eye pursuit tracking, visual function.		
19. ABSTRACT (Continue on reverse if necessary and identify by block number)					
<p>The effects on human volunteers of atropine in doses of 2 and 4 mg/70 kg body weight, 2-PAM Cl in doses of 600 and 1200 mg/70 kg and all possible combinations of these two anticholinergic drugs are described on a tank tracking simulator task (BLASER), and on a battery of visual functions, and on selected cardiovascular measures as well as on cognitive/memory function.</p> <p>The majority of effects of the combination doses can be predicted from the atropine results. 2-PAM Cl has no effect on any measured function. The doses containing 4 mg atropine produced significant loss of tracking performance with peak loss occurring around 3 hours after injection. Signs of recovery were noted at 4 hours. The lower doses of atropine alone and in combination with 2-PAM Cl had no effect on tracking.</p> <p>Atropine alone and in combination with 2-PAM Cl produced long lasting visual side-effects. A small but significant potentiation of effects occurred for the high</p>					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION		
22a. NAME OF RESPONSIBLE INDIVIDUAL Mrs. Virginia M. Miller			22b. TELEPHONE (Include Area Code) 301/663-7325		22c. OFFICE SYMBOL SGRD-RMS

dose combination on several peripheral visual functions and some cardiovascular measures. Atropine (4 mg) was also found to affect retinal color mechanisms. No effect was found on memory/cognitive function.

The time course of effects are delineated for each measure. Cardiovascular measures have a rapid time course, tracking performance loss shows an intermediate time course and the peripheral visual functions show a very prolonged time course.

SUMMARY

Atropine sulphate and 2-PAM Cl are the two currently fielded antidotes to organophosphate poisoning. We have previously demonstrated that although atropine up to 2 mg/70 kg body weight has visual side-effects, no significant loss of complex visuo-motor tracking performance results. The purpose of the experiments discussed in this final report was to delineate the effects of atropine in doses up to 4 mg on tracking performance and visual function. In addition, the effects of 2-PAM Cl up to 1200 mg/70 kg on the same battery of tests are reported. Finally, the majority of this report is concerned with the effects on human volunteers of atropine and 2-PAM Cl in combination. To our knowledge, this is the first report of the combination of these anti-cholinergic drugs on human cardiovascular, tracking, visual and memory performance.

Each of the three experiments was performed double-masked, in a balanced Latin square design with a placebo dose. The complete time course of drug effects was described for the majority of functions.

Experiment 1. 2-PAM Cl 0, 600, 1200 mg/70 kg body weight. Eight male young volunteers.

No significant change was found for any measure on any dose except for a small increase in diastolic blood pressure. The most severe side-effect of 2-PAM Cl when given alone was pain at the injection site.

Experiment 2. Atropine 0, 2, 4 mg/70 kg body weight. Ten young male volunteers.

The lower dose of atropine produced no effect on tracking performance (BLASER), but the higher dose caused significant loss of tracking efficiency while long-lasting dose-related changes in peripheral visual function were noted for both doses. Accommodation and pupil size were

affected, resulting in losses of near visual acuity. Distance visual function was unaffected. The most noticeable side-effect of the 4 mg dose was fatigue.

Experiment 3. Atropine 0, 2, and 4 mg; 2-PAM Cl 600, 1200 mg; Atropine 2 mg with 600 mg 2-PAM Cl; Atropine 2 mg with 1200 mg 2-PAM Cl; Atropine 4 mg with 600 mg 2-PAM Cl; Atropine 4 mg with 1200 mg 2-PAM Cl. Ten young male volunteers given each of the nine different doses as intra-muscular injections in the upper thigh.

The majority of effects of the combination can be predicted from the results of atropine alone. No significant loss of tracking performance was found for any combination of 2 mg atropine while all combination with 4 mg atropine produced significant loss of tracking efficiency with the peak of loss occurring around 3 hours after injection. Signs of recovery of tracking performance were noted around 4 hours after injection. Dose-related changes in accommodative ability, pupil size and response, and near visual acuity were found. In addition, small but significant and completely unexpected potentiation effects were found for the combination of 4 mg atropine and 1200 mg 2-PAM Cl on some of the peripheral visual functions as well as some cardiovascular measures, such as blood pressure. The lower dose combinations did not show any potentiation.

No effects were found on a battery of memory/cognitive tests measured at three hours after injection.

Appendix 5 of this report contains all the "raw" data for each individual for each of the nine drug doses on the more than 60 different functions measured. We hope that these data tables will serve as an important data base for other investigators interested in the effects of these anti-cholinergic drugs on human performance.

FOREWORD

This is the final report for a study supported by the U.S. Army Medical Research and Development Command. Part of this study was conducted at the Smith-Kettlewell Institute in San Francisco and part of the work was performed at the Division of Ocular Hazards at Letterman Army Institute of Research, the Presidio, San Francisco. Without the superb cooperation of Colonel Edwin Beatrice and his staff, we would not have been able to conduct this study.

We particularly want to thank Major David Penetar for his efficient organization of the project and SP5 Jerome W. Molchany, SP5 Helen L. Ford and SP4 Daniel W. Cheng for capably running the BLASER equipment.

We also want to thank Michael Rowbotham, M.D., who, in conjunction with one of the investigators, Reese Jones, M.D., provided essential medical services during the experiment.

Many others contributed to the successful completion of the study; we wish to thank Mark Brown, Mark Abbott, Lisa Harvey, Q.D., Dale Allen, Q.D., Catherine Noonan, Q.D. and Lori Landsman, Q.D. for help in data collection and Susan Ovington and Mittie King for essential secretarial and administrative services.

We also thank our anonymous volunteers whose patients and good humor contributed significantly toward the project.

For the protection of human subjects, the investigators have adhered to policies of applicable Federal Law 45CFR46.

TABLE OF CONTENTS

SUMMARY.....	i
FOREWORD.....	ii
LIST OF FIGURES.....	iv
INTRODUCTION.....	1
EXPERIMENT I - 2-PAM CHLORIDE	
Methods.....	7
Results - Tracking BLASER.....	13
Summary.....	21
EXPERIMENT II - ATROPINE.....	22
EXPERIMENT III - COMBINATION STUDY - SUBJECTS.....	25
COMBINATION STUDY - METHODS.....	27
COMBINATION STUDY - RESULTS I - BLASER.....	31
COMBINATION STUDY - RESULTS II - PHYSIOLOGICAL MEASURES.....	40
COMBINATION STUDY - RESULTS III - VISUAL MEASURES.....	48
COMBINATION STUDY - MEMORY/COGNITIVE FUNCTIONS.....	74
DISCUSSION.....	82
LITERATURE CITED.....	91
APPENDICES	
1. Health History Questionnaire.....	95
2. Subject Information Form (Drug Use).....	96
3. Subjective Checklist (Mood Questionnaire).....	97
4. Drug Experiments Conducted under Army Contracts.....	98
5. Individual Raw Data Tables.....	99

FIGURE LEGENDS

1. Horizontal tracking scores (in microradians) defined as the standard deviation of horizontal tracking error, are shown as a function of time after injection of 2-PAM Cl (0, 600 and 1200 mg/70 kg body weight). The solid lines show performance under the bright ambient lighting condition and the dashed lines represent tracking scores under the dim light level (N=8). (Page 13)
2. The time course of pulse rate (beats/min) shown for two doses of 2-PAM Cl (600 and 1200 mg/70 kg) and placebo (N=8). (Page 15)
3. Systolic (upper panel) and diastolic (lower panel) blood pressure mm Hg) is shown as a function of time after injection of 0, 600 and 1200 mg/70 kg 2-PAM Cl (N=8). (Page 16)
4. Snellen visual acuity, measured using Bailey-Lovie low (10%) contrast chart at a 6 m test distance (upper panel) and at a 40 cm test distance (lower panel), as a function of time after injection of 2-PAM Cl (0, 600 and 1200 mg/70 kg; N=8). The ordinate scale represents number of letters correctly identified. Each line has 5 letters; 55 = 20/20. (Page 18)
5. The time course of drug-induced changes in pupillary diameter (upper panel) and accommodative ability (nearpoint in cm; lower panel) produced by intramuscular injections of 2-PAM Cl (o. 600 and 1200 mg/70 kg). The measurements were performed under moderate photopic illumination of 861 lux (N=8). (Page 19)
6. The time course of subjective rating of pain produced by 0, 600 and 1200 mg/70 kg body weight 2-PAM Cl (N=8). (Page 21)
7. The average percentage change in function after a 4 mg dose of atropine is shown as a function of time after injection for several measures: A=accommodation; P=pulse rate; D=pupil size; H=subject "high" rating; T=tracking scores under dim ambient illumination; (N=10). (Page 24)
8. The time course of changes in horizontal tracking performance produced by injection of 4 mg atropine (A), 1200 mg 2-PAM Cl (P), placebo (O), and combination dose of 4 mg atropine and 1200 mg 2-PAM Cl (C) (N=10). (Page 33)
9. The time course of changes in vertical tracking performance produced by injection of the four representative doses: 4 mg atropine (A), 1200 mg 2-PAM Cl (P), placebo (O), and the combination dose of 4 mg atropine and 1200 mg 2-PAM Cl (C) (N=10). (Page 34)
10. The time course of changes in tracking performance, determined by percent time on target, produced by injections of 4 mg atropine (A), 1200 mg 2-PAM Cl (P), placebo (O), and combination dose of 4 mg atropine and 1200 mg 2-PAM Cl (C) (N=10). (Page 35)

- 11a. & b. The time course of changes under light conditions (upper panel) and dark conditions (lower panel) for acquisition time produced by injection of the four representative doses (A=4 mg atropine, P=1200 mg 2-PAM Cl, O=placebo, C=combination 4 mg atropine/1200 mg 2-PAM Cl) (N=10). (Page 36)
12. The average percentage change in horizontal tracking errors under dark conditions after injections of 2 and 4 mg atropine (Placebo=O) (N=10). (Page 38)
13. The average percentage change in horizontal tracking errors under light conditions produced by injection of 2 and 4 mg atropine (placebo) (N=10). (Page 38)
14. (Upper panel) The time course of change in pulse rate (beats/min) produced by injection of the four representative doses: A=atropine 4 mg; P=2-PAM Cl 1200 mg; O=placebo; C=combination dose 4 mg atropine/1200 mg 2-PAM Cl. Lower panel shows the change in pulse rate with placebo subtracted out (N=10). (Page 41)
15. The time course of subjective rating of intoxication ("high") produced by injection of the four representative doses (N=10). (Page 42)
16. The time course of changes in systolic blood pressure produced by injection of the four representative doses (upper panel); results after placebo data subtracted from other doses (lower panel) (N=10). (Page 44)
17. (Upper panel) The time course of changes in diastolic blood pressure produced by injection of the four representative doses; (upper panel) to more clearly show the drug-induced changes, placebo results have been subtracted out (N=10). (Page 46)
18. The time course of subjective rating of pain produced by injection of 4 mg atropine, 1200 mg 2-PAM Cl, placebo, and combination dose (N=10). (Page 47)
19. Picture of high and low contrast visual acuity chart. (Page 48)
- 20a. The time course of changes in distance visual acuity produced by injection of 4 mg atropine, 1200 mg 2-PAM Cl, placebo and combination dose for the high contrast chart. b. Time course of changes in distance visual acuity shown for low contrast chart (N=10). (Page 49)
- 21a. The time course of changes in near visual acuity for the high contrast chart (90% contrast) produced by injection of the four representative doses; b. The time course of changes in near visual acuity shown for low contrast chart (10% contrast) (N=10). (Page 51)
- 22a. The time course of accommodative amplitude in diopters (100/near point cm) for upgaze. b. Primary gaze and c. down gaze produced by injection of the four representative doses (N=10). (Page 53)

23. The time course of accommodative amplitude for primary gaze with placebo subtracted out after injection of the four representative doses (N=10). (Page 54)
- 24a. The time course of accommodative amplitude for the combined results of the new and old studies shown as a % change in diopters. b. The time course shown as % change in cm (N=10). (Page 56)
25. The time course of changes in pupil size produced by placebo, 1200 mg 2-PAM Cl, 4 mg atropine and combination dose (upper panel) and the same changes with placebo subtracted out (lower panel) (N=10). (Page 58)
26. The time course of pupil response (examiner ranking) changes produced by injection of the four representative doses (N=10). (Page 60)
27. The time course of changes in stereopsis (Randot test) produced by injection of the four representative doses (N=10). (Page 62)
28. The time course of temporal color matching changes (units are in milliseconds) produced by the injection of the four representative doses with the values for placebo and predose subtracted out to show only the drug-induced changes (N=10). (Page 64)
29. Maxwellian view computer controlled optical system used for the increment threshold experiments. (Page 67)
30. Time course of sensitivity of B cone pathways measured using two different wavelengths: 440 nm (top) and 480 nm (bottom). (Page 70)
31. Time course of sensitivity of the G cone pathways. (Page 70)
32. Time course sensitivity of R cone pathways. (Page 71)
33. Time course of "achromatic" sensitivity; 25 Hz flicker measured for two different wavelengths: 570 nm (top) and 480 nm (bottom). (Page 72)
34. Results for five item acquisition and recall. Dose codes: 1) Placebo, 2) 600 mg 2-PAM Cl, 3) 1200 mg 2-PAM Cl, 4) 2 mg atropine, 5) 4 mg atropine, 6) 600 mg 2-PAM Cl and 2 mg atropine, 7) 600 mg 2-PAM Cl and 4 mg atropine, 8) 1200 mg 2-PAM Cl and 2 mg atropine, and 9) 1200 mg 2-PAM Cl and 4 mg atropine. (Page 77)
35. Digit span (forward, backward and total) evaluated 180 min post injection (N=10). Dose codes: 1) placebo, 2) 600 mg 2-PAM Cl, 3) 1200 mg 2-PAM Cl, 4) 2 mg atropine, 5) 4 mg atropine, 6) 600 mg 2-PAM Cl and 2 mg atropine, 7) 600 mg 2-PAM Cl and 4 mg atropine, 8) 1200 mg 2-PAM Cl and 2 mg atropine, 9) 1200 mg 2-PAM Cl and 4 mg atropine. (Page 78)

36. PASAT time/correct response. The # sign represents the mean for each dose. A=one number 2.4 s; B=1/2.0 s; C=1/1.6 s; D=1/1.2 s. Dose codes: 1) Placebo, 2) 600 mg 2-PAM Cl, 3) 1200 mg 2-PAM Cl, 4) 2 mg atropine, 5) 4 mg atropine, 6) 600 mg 2-PAM Cl and 2 mg atropine, 7) 600 mg 2-PAM Cl and 4 mg atropine, 8) 1200 mg 2-PAM Cl and 2 mg atropine, and 9) 1200 mg 2-PAM and 4 mg atropine. (Page 81)
37. Percent change in selected functions. The graph combines data from both experiments involving atropine. P=pulse rate; T=tracking performance in the dark ambient condition; A=accommodation; D=pupil diameter and H=subjective "high" rating. (Page 89)

INTRODUCTION

Recent events in the world have shown that the major Western powers may be quickly drawn into combat or peace-keeping roles in locales as far flung as the Middle East and the Caribbean Basin. In the worst case scenario for conventional warfare, combat troops will face an enemy armed with and prepared to use chemical warfare agents. Organophosphate poisoning in the military situation is a real threat to the soldier. Consequently, the military must be prepared to use drugs for treatment for such poisoning. Antidote and pre-treatment drugs can be used in an attempt to offset that threat; however, the side effects on performance of antidotes given erroneously when no organophosphate poisoning has occurred or the short term side effects of pre-treatment drugs on vision and performance have not been systematically studied at the dose levels available to the soldier. Furthermore, the effect on soldier performance needs to be estimated from studies on the combined effects of pre-treatment and antidote and antidote combination administration, since this scenario can be expected in the field.

Organophosphate compounds disrupt cholinergic transmission by deactivating the cholinesterase enzyme and can, in severe poisoning, produce respiratory failure and death. The poisoning results from the accumulation of acetylcholine at its many effector sites in the body. Treatment for organophosphate exposure is based on two classes of drugs - cholinergic blocking agents such as atropine and cholinesterase re-activators such as 2-PAM Chloride. In addition, a regimen of prophylaxis

may be used. Prophylactic treatment may be achieved by the use of cholinesterase inhibitors that are more reversible than the organophosphate compounds used as nerve agents. The rationale is that reversible cholinesterase inhibitors will hold some acetylcholinesterase in reserve. If the need exists, this reserve can be easily reactivated by oximes such as 2-PAM chloride, which may only successfully reactivate a small portion of the enzyme inhibited by the organophosphate nerve agents.

The major thrust of our research over the past 8 years has been to study the effects on vision performance and general performance for complex military related tasks of each of the currently available antidotes (atropine and 2-PAM chloride), both in isolated doses and in combination. Initially, our research was also directed at the effects of benactyzine hydrochloride, an early candidate for antidote treatment. Our studies were intended to provide a solid data base for predicting answers to very practical questions of soldier performance in the field. For example, will soldiers be able to function, and if so with what level of efficiency? How long will they be affected by the combined drugs or any of the drugs taken in isolation? Are there tasks that they should not undertake? Are there ways in which their tasks can be structured to minimize the effects of these drugs? How long will performance be altered following a particular dose or dose combination? Three broad categories of function were studied. First, physiological functions such as pulse rate and blood pressure were followed for each of the antidote treatment conditions. Second, performance on a field-related tracking task (BLASER) was monitored in detail. Finally, a battery of vision and oculomotor functions, known to be important in the field situation, were tracked prior to and following antidote treatment.

While a great deal is known about the action of systemically introduced atropine related to surgery and the general pharmacological effects of atropine in blocking the action of acetylcholine, far less is known about systemic atropine effects on vision and general performance. A few studies have identified the effects of atropine on pupil function and near vision (e.g., Cullumbine, et al, 1955; Mirakhur, 1978; Headley, 1982). These studies suggest that by the time the 4 mg/70 kg body weight dose has been reached, atropine produces near vision problems for all individuals. However, much less information is known about the dose threshold for pupil and accommodation effects. Other vision functions such as color discrimination, low contrast visual acuity, contrast border detection, and intraocular pressure changes have not been well studied previously. Furthermore, tracking performance, involving both fine oculomotor and hand-eye coordination as well as good visual acuity, has not been systematically studied for any of the antidote drugs. This latter task is most clearly relevant to the field situation and combines complex aspects of both vision and motor control important to military performance.

In the first two years of our antidote studies, we demonstrated that benactyzine hydrochloride produced significant losses in visual function. The drug-induced changes were rapid in onset and were accompanied by short-term memory loss and general malaise. The observed vision changes combined with altered motivation and short-term memory could be expected to seriously interfere with performance (Brown et al, 1982a, 1982b). We next turned our attention to intramuscular atropine. In two separate contracts in 1982 (Contract DAMD17-80-G-0066) and 1983 (Contract DAMD17-81-G-1216), we conducted experiments involving a series of visual functions, visual search and tracking performance on the BLASER system. Atropine doses

varied from 0.25 to 2 mg/70 kg body weight. The study showed that atropine in these doses had little effect on those vision functions which influenced general performance (Baker et al, 1983); nor did it impair performance on the BLASER tracking task or visual search conducted while the subject was in motion.

In followup studies, in collaboration with LAIR, we increased the dose of atropine to 4 mg/70 kg and additionally studied the effects of 2-PAM chloride - the oxime currently used in conjunction with atropine. The effects of the three doses of atropine (0, 2, 4mg/70 kg body weight) were reported in detail in the Annual Report "Effects of Atropine and 2-PAM Chloride on Vision and Performance", November 1, 1984 and also in Haegerstrom-Portnoy et al., 1986. Ten subjects performed on the BLASER tracking task under bright daylight and dim moonlight ambient conditions after intramuscular injections of each of the three dose levels of atropine. As with our other studies, all drug treatments were double masked. Performance was measured prior to injection and 30 and 150 minutes following drug administration. A battery of visual tests (visual acuity, contrast sensitivity, color discrimination, pupil size, accommodative amplitude and intraocular pressure) and physiological tests (pulse rate, blood pressure and EKG) was also administered prior to injection as well as 1.25, 3.25, 22 and 46 hours after injection. Both doses of atropine (2 and 4 mg) produced similar increases in pulse rate (35 beats/min) with return to baseline after 4 to 6 hours. A long-lasting and dose-related increase in pupil diameter and decrease in accommodation amplitude with loss of near acuity (1.5 lines on acuity chart) was found. These functions returned to baseline 2 days after injection. The other vision functions measured showed no change. Tracking performance was unaffected by the 2 mg dose in

confirmation of our earlier studies (Baker et al, 1983). The 4 mg dose of atropine produced a statistically significant decrease in tracking performance 2.5 to 3 hours after injection. The time course of changes in tracking performance did not follow the cardiovascular changes but instead followed a much slower pattern similar to the vision changes. However, the changes in vision function cannot explain the tracking performance loss, however, since the tracking involved a distant visual target, while the atropine-induced changes produced degradation of near vision only. We conclude that the loss in tracking performance may rather be related to the extreme fatigue and sedation caused by the 4 mg dose. The results of this phase of our research were also reported in the Fifth Annual Bioscience Review in Columbia, Maryland, May 1985.

Since that report, two additional phases of the research have been completed. The first involved the study of three dose levels of 2-PAM chloride. The second was a very extensive study involving the combined doses of atropine (0, 2, 4 mg/70 kg body weight) and 2-PAM chloride (0, 600, 1200 mg/70 kg body weight). These last two experiments are the focus of this final report. However, for completeness they should be reviewed along with the detailed findings of the 1984 Annual Report (Contract No. DAMD17-83-C-3198). Appendix 4 summarizes the anticholinergic drug experiments conducted under Army contracts by this group between 1978 and 1986 under the principal investigatorship of A. Jampolsky, M.D.

The same battery of tests administered for the isolated doses of atropine (1984 Annual Report, Contract No. DAMD17-83-C-3198) were also administered to eight volunteers after injection of 2-PAM chloride in doses up to 1200 mg/70 kg body weight. Tracking performance and all visual functions were unaffected by both doses. Pulse rate and diastolic blood

pressure were unaffected while systolic blood pressure showed a small but significant increase after the 1200 mg dose. All of these results are presented in detail in this final report. In the much larger study reported in this document, the protocol included the effects of combined doses of atropine and 2-PAM chloride on BLASER tracking performance, a battery of vision tests and evaluation of short and long term memory as well as on physiological function. A complete time course of drug effects was determined by repeating all measures prior to injection and several times after injection including the following days. Nine different drug doses were administered to ten volunteers. Surprisingly, the results suggests significant synergism between atropine and 2-PAM chloride at the higher doses. The combination of 4 mg atropine and 1200 mg 2-PAM chloride results in cardiovascular and visual side-effects that show considerably more changes and last longer than atropine alone. This result is very surprising considering that we have previously shown that 2-PAM chloride alone produces no effects on either the cardiovascular system, the visual system or tracking performance. To our knowledge, there are no previous reports of effects of the combination of atropine and 2-PAM chloride in these doses. However, two reports on cardiovascular effects, temperature and sweat rate suggest that 2 mg of atropine in combination with 600 mg of 2-PAM chloride showed relatively little synergism.

We believe the results presented here in this final report provide an enormous data base for other investigators interested in the separate and combined doses of atropine and 2-PAM chloride. Because of this anticipated interest, we include detailed tables of test results for the many drug conditions.

EXPERIMENT I - 2-PAM CHLORIDE

METHODS

Eight subjects participated in the study. All were Caucasian males between the ages of 21 and 31. The average age was 27 years. They ranged in weight from 59 to 84 kg with a mean of 74 kg. All were high school graduates and, on average, had completed 4 years of college. Many had attended college (average, 15.4 years of education). Seven of the eight were occasional users of alcohol and marijuana; one subject was a frequent user of marijuana.

Our subjects were asked to refrain from all other drugs during the experiment (including alcohol and coffee). In addition, they did not smoke any marijuana for at least 2 weeks prior to the start of the experiments. We verified that they were not using any drugs by performing urinalyses on each of the 3 days that we gave them injections. All subjects provided urine samples while in the laboratory at Letterman Army Institute of Research (LAIR) on the drug test days.

The urine samples were tested with the Syva semi-quantitative Emit/d.a.u. assay system. The Emit/d.a.u. assay detects 50 ng/ml or more 11-nor-delta-9-THC-carboxylic acid or analyte equivalents, with fewer than 5% false negative or false positive results.

All subjects completed a health history questionnaire (see Appendix 1) and a drug use history form (Appendix 2). The subjects received complete eye examinations, including measurement of visual acuity with and without correction, phorias at 20 feet and 40 cm, accommodative amplitude, color vision, stereopsis, direct and consensual pupil responses, intraocular pressure by non-contact tonometry, fundus examination by direct

ophthalmoscopy and examination of the globe using biomicroscopy. Blood pressure, pulse and weight were measured. The subjects were then interviewed by a psychiatrist and determined to be in good mental and physical health. The subjects signed informed-consent forms to participate in the study and received a copy of the experimental subjects' bill of rights.

During a 2 week period, each subject received three injections, one each of saline, 600 mg of 2-PAM Cl/70 kg body weight and 1200 mg of 2-PAM Cl/70 kg body weight. Injections were spaced 72 hours apart to allow all physiological functions to return to baseline, eliminating any side effects that may have been caused by the previous injection. All drug administration was double blind, according to a Latin square design. Only the physician who gave the intramuscular injections was aware of the dose.

BLASER

The BLASER simulator includes a viscous-damped designator tracking device which is mounted in a sandbag bunker. The tracking device opens onto a scale model desert terrain through a porthole in the front of the bunker. A scale model tank, with an infra-red light emitting diode (LED) mounted on the side, moves in a fixed arc at a simulated distance of 1 km and a constant angular velocity of 5 mrad/sec. The tank scene is imaged by a television camera which is mounted coaxially with the optics of the designator, with the LED signal providing a reference point to electronically monitor tracking performance. Reduced ambient lighting conditions were simulated by inserting a 3.6 neutral density filter in the optical pathway. The average terrain luminance without the filter was 340 cd/m² and with the filter, 0.085 cd/m². Separate horizontal and vertical

axis tracking scores were computed for each trial, based on the standard deviation of the mean absolute angular tracking error expressed in microradians. These tracking scores were averaged over ten trials for each session.

Each volunteer was shown the BLASER area, and the nature of the tracking task was explained to him. Each participant then began two days of practice. The first-day's practice entailed 11 1-minute tank tracking trials under high ambient light conditions and another 11 trials under dim ambient light conditions. During each 1 minute trial, the tank moved back and forth four times along the fixed arc. There was approximately 1 minute between trials and a 10 minute low light adaptation period preceding the 11 dim light trials; during this time the subject sat in the darkened bunker. After each tracking episode, summary information was given to the subject, in the form of a percent time-on-target score and a horizontal error score to provide performance feedback.

On the second day, three practice sessions consisting of ten 15 second trials under bright lights and ten under dim light conditions were given. Again, the approximate time between trials was 1 minute, and a 10 minute low light adjustment period preceded the dim light trials.

The day following the two training days was the first of three drug test days. On each day, three tracking sessions were given, and each session consisted of ten trials conducted first under bright light and then ten trials under dim light conditions.

Following the first session of each experimental day and 30 minutes before the second session, the 2-PAM Cl (or placebo) was given by intramuscular injection in the upper leg. The second tracking session was then started 30 minutes after the injection, and was followed by a rest

period. The third session for the day was begun 150 minutes after the injection.

On experimental days, the subjects wore disposable electrocardiogram (EKG) electrodes and had their EKGs continuously monitored while they performed the BLASER tracking task. The EKGs were displayed on an oscilloscope for monitoring and also recorded on FM tape.

Separate analyses of variance (ANOVAs) were computed for horizontal and vertical tracking scores and for bright and dim lighting conditions, using the BMDP-4V computer program (Dixon and Brown, 1983). The "raw" tracking scores were not normally distributed and were, therefore, log-transformed before the ANOVAs were performed. The experimental design was set up as a 2 (light level) X 3 (dose) X 3 (time) factorial design with a no-dose (control) group.

In addition to the BLASER tracking, a series of visual and physiological functions were measured to evaluate the drug effects. Each of the tests listed below was administered five times for each injection, once at 45 minutes before injection and four times following injection (at 75 minutes, 195 minutes, 22 hours and 46 hours).

1. Distance Visual Acuity, Low Contrast:

The subject monocularly viewed and read the printed low contrast (10%) Bailey-Lovie eye chart at a distance of 6 m, while wearing his habitual correction. The test score was determined by the total number of letters identified correctly on each chart. High contrast acuity was not measured since preliminary pilot studies in two volunteers injected with 1200 mg 2-PAM Cl failed to show any change in acuity. The low contrast chart is more sensitive to minor alterations in contrast detecting mechanisms and was

chosen for that reason.

2. Near Visual Acuity, Low Contrast:

At a distance of 40 cm, the subject monocularly viewed and read the low contrast (10%) Bailey near acuity charts under illumination of 861 lux. The score was determined by the total number of letters identified correctly.

3. Pupil Size:

The diameter of the pupil of each eye was measured with a millimeter ruler under illumination of 861 lux. This method is accurate to 0.5 mm and was chosen for its portability and reproducibility during the performance experiments at LAIR.

4. Accommodative Amplitude:

With the fellow eye covered, the subject brought a finely detailed target toward the habitually corrected eye until the target "first appeared blurred." The distance between the target and the spectacle plane was measured. Three measurements were taken. The test was conducted under illumination of 861 lux.

5. Color vision:

The Desaturated D-15 Color Vision Test was administered. The number of errors made was recorded. A "color confusion index" was calculated based on distance traveled in CIE uniform color space (Huie et al, 1984). Young adults with normal color vision generally produce a perfect score on this test, i.e., no errors.

The following physiologic measures were administered three times for each injection (45 minutes pre-injection; 75 and 195 minutes post-injection). In addition, "high" rating was requested from each subject at 15 min post-injection.

- o Blood pressure
- o Pulse rate
- o Subjective checklist of symptoms and their severity
(Appendix 3)
- o Subjective "high" rating

RESULTS

Tracking-BLASER

The standard deviations of the absolute horizontal tracking errors are representative of the tracking performance and are shown in Figure 1 for both light and dim conditions for placebo and the two doses of 2-PAM Cl.

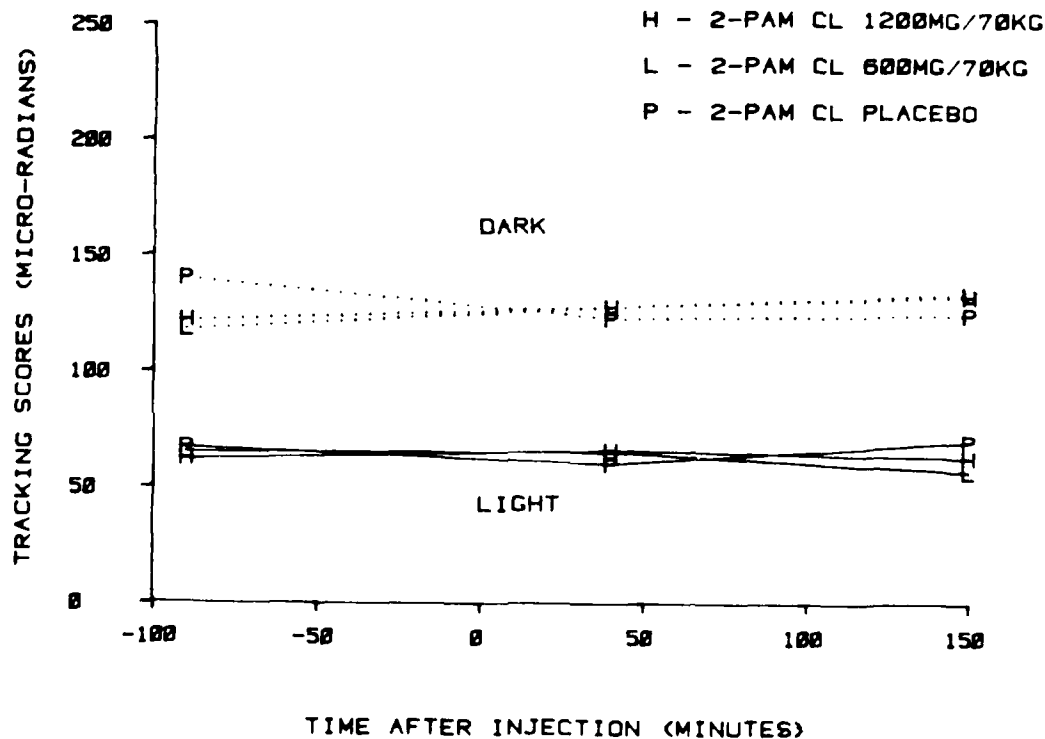


Figure 1. Horizontal tracking scores (in microradians) defined as the standard deviation of horizontal tracking error, are shown as a function of time after injection of 2-PAM Cl (0, 600, and 1200 mg/70 kg body weight). The solid lines show performance under the bright ambient lighting condition and the dashed lines represent tracking scores under the dim light level (N = 8).

The results clearly show that tracking performance is unaffected by intramuscular injection of 2-PAM Cl up to 1200 mg. None of the minor deviations from a straight line shown in the figure is statistically significant either by ANOVA performed on the log transformed scores or by non-parametric Walsh test.

All the results of the physiologic and visual measurements were subjected to analysis by the non-parametric Walsh test. This test compares each subject's result before injection to his own results after injection. In the following discussion of these results, "significance" refers to a probability on the Walsh test of less than 0.05, and in most cases less than 0.01.

Physiologic Measures

No statistically significant changes in pulse rate were noted after 2-PAM Cl injection. Figure 2 shows the result; the small change seen a few hours after injection is also seen after placebo and does not represent a drug effect.

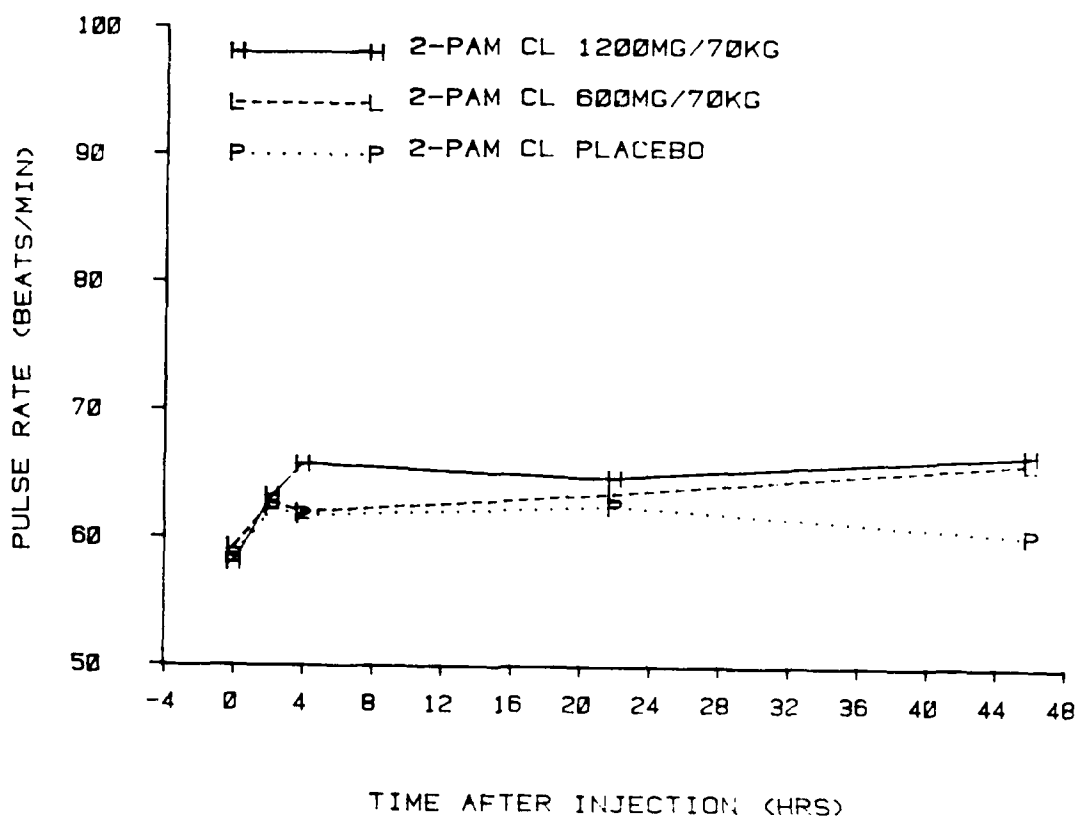


Figure 2. The time course of pulse rate (beats/min) shown for two doses of 2-PAM Cl (600 and 1200 mg/70 kg) and placebo (N = 8).

Each subject was asked several times during the day to rate his state of intoxication on a scale of 0 to 100, where 0 is "normal" and 100 is as "high" as subject has ever been on any drug or drug combination. No significant change in "high" rating was seen with either dose.

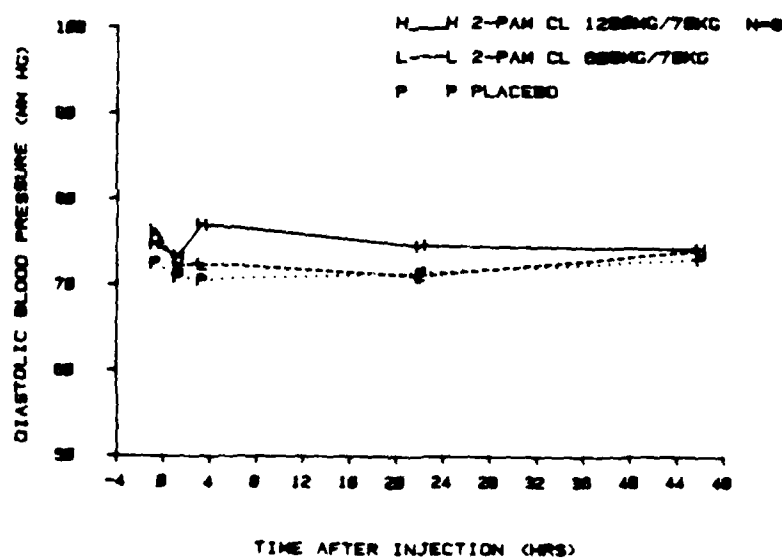
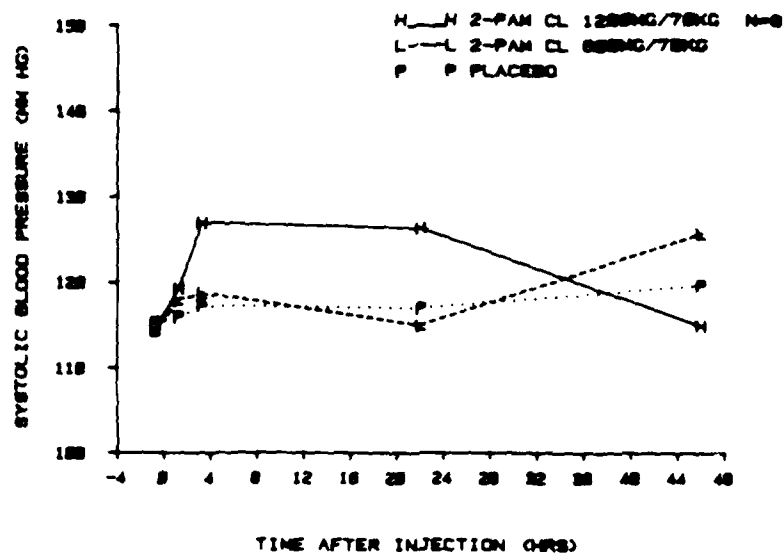


Figure 3. Systolic (upper panel) and diastolic (lower panel) blood pressure (mm Hg) is shown as a function of time after injection of 0, 600 and 1200 mg/70 kg 2-PAM Cl (N=8).

Figure 3 shows the changes in blood pressure produced by 2-PAM Cl. Systolic blood pressure (in the upper panel) shows a small but statistically significant increase at both the 195 minutes and 24 hour measurement time after injection of 1200 mg 2-PAM Cl. The increase is about 12.5 mm Hg. The lower dose does not produce any statistically significant changes. Diastolic blood pressure (in the lower panel) is unaffected by 2-PAM Cl.

Vision Measures

No changes in distance and near visual acuity for low contrast targets were observed for either dose of 2-PAM Cl (see Figure 4). The subjects did not report any noticeable change in vision either at distance or near on the subjective questionnaire.

Pupil Size

The results of the pupil diameter measurements are shown in Figure 5 (upper panel) for both doses and placebo. The graph clearly shows that the pupils are unaffected by the drug; no statistically significant changes were found.

Accommodation

Accommodative ability, expressed as the nearest point of clear vision, is also clearly unaffected by the drug, as shown in the lower panel of Figure 5.

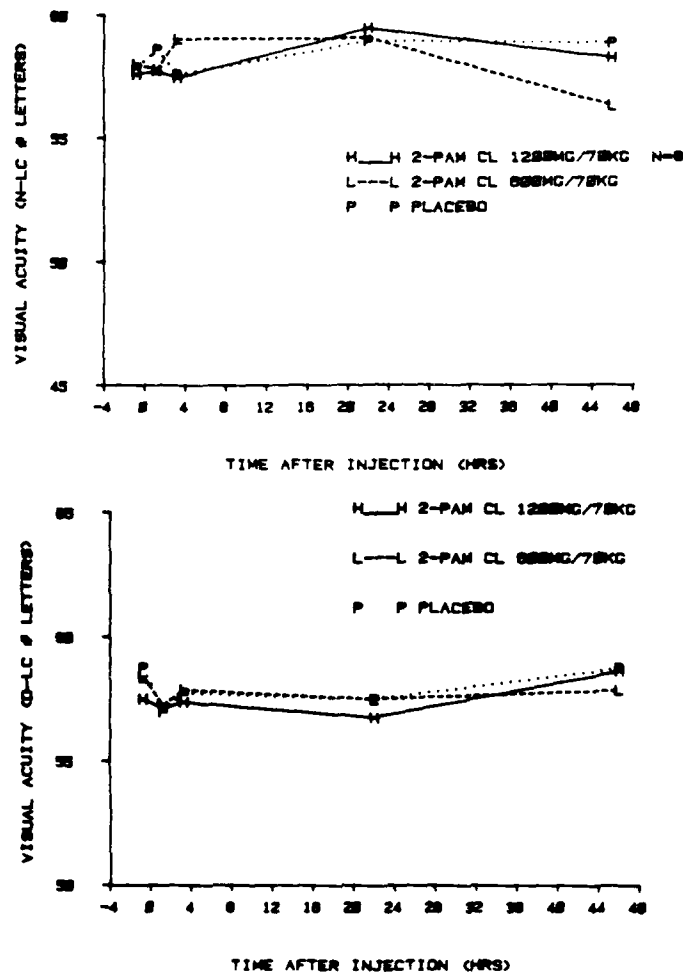


Figure 4. Snellen visual acuity, measured using Bailey-Lovie low (10 %) contrast chart at a 6 m test distance (upper panel) and at a 40 cm test distance (lower panel), as a function of time after injection of 2-PAM Cl (0, 600 and 1200 mg/70 kg; N=8). The ordinate scale represents number of letters correctly identified. Each line has 5 letters; 55 = 20/20.

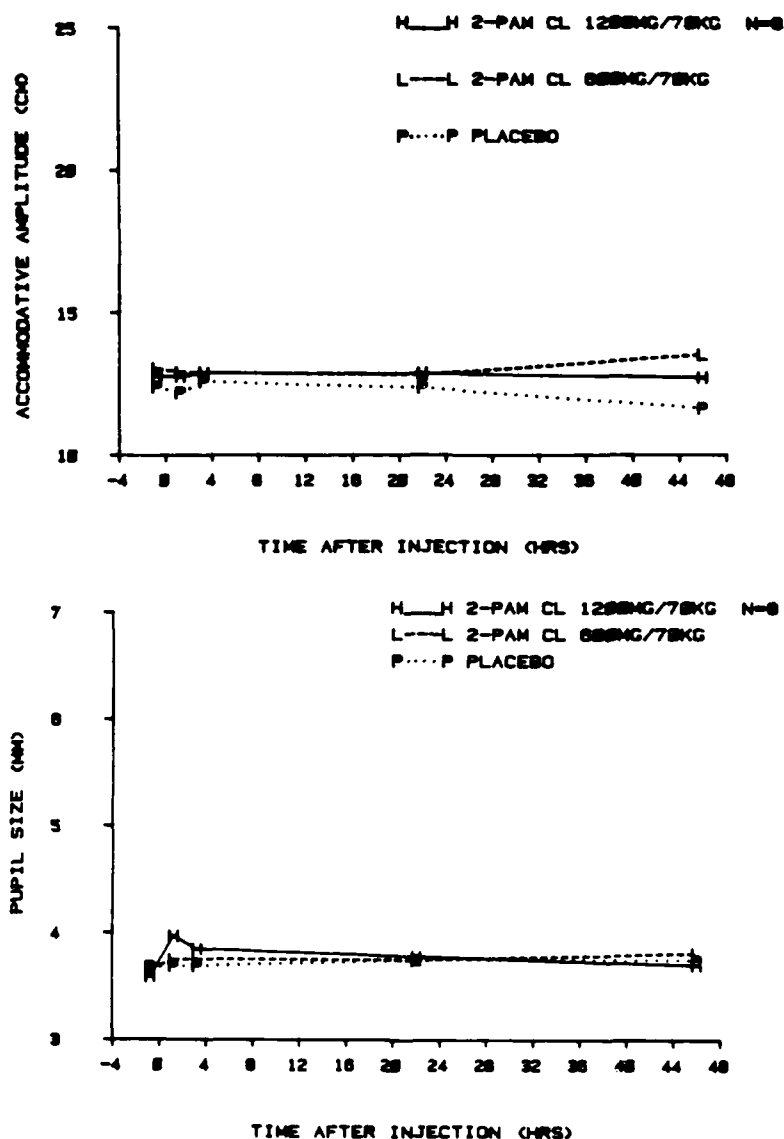


Figure 5. The time course of drug-induced changes in pupillary diameter (upper panel) and accommodative ability (nearpoint in cm; lower panel) produced by intramuscular injections of 2-PAM Cl (0, 600, and 1200 mg/70 kg). The measurements were performed under moderate photopic illumination of 861 lux (N = 8).

Color Vision

We used the desaturated D-15 cap test as a measure of color vision. This test measures color confusion and has been shown to be sensitive to changes in retinal function in disease (Adams, et al, 1982). We calculated a color confusion index based on distance traveled in CIE uniform color space. No significant change was produced by either dose of 2-PAM Cl.

Subjective Estimate of Pain

During the pilot study which preceded the main experiment involving 2-PAM Cl, we found that the subjects complained that the injections of 2-PAM Cl were painful. We, therefore, moved the injection site from the upper arm to the upper leg, with the aim of reducing the pain. In addition, we asked each subject participating in the main experiment to rate the pain at the injection site on a scale of 0 to 4, where 4 represents maximum pain. The results of this subjective rating are shown in Figure 6. The highest pain rating occurred for the 1200 mg dose 75 minutes after injection with recovery the following day, 22 hours after injection. The subjects complained about the pain in their legs and made the comment that the pain was severe enough that their concentration was affected.

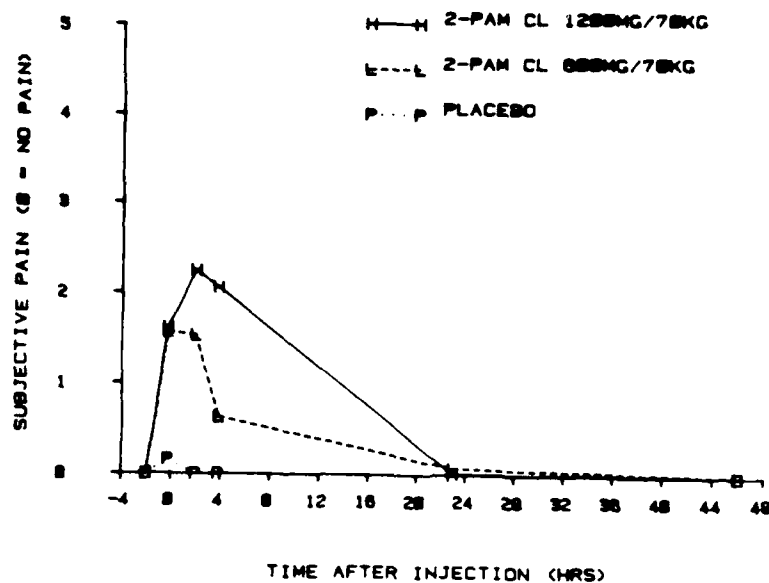


Figure 6. The time course of subjective rating of pain produced by 0, 600 and 1200 mg/70 kg body weight 2-PAM Cl (N=8).

SUMMARY 2-PAM CHLORIDE

The results of this study demonstrate that intra-muscular injection of 2-PAM Cl in doses up to 1200 mg/ 70 kg body weight produces minimal or no changes in tracking performance, visual function or cardiovascular function. The only statistically significant change was a small (12.5 mm HG) increase in systolic blood pressure 195 minutes after injection. The most noticeable side-effect was long-lasting pain at the injection site. The lack of drug effect on any of the functions measured was predictable from the pharmacology of 2-PAM Cl. The drug is supposed to reactivate the enzyme cholinesterase which has been bound by exposure to organophosphate agents. Since the subjects participating in this experiment had not been exposed to any agents and did not have any bound cholinesterase, 2-PAM Cl did not have any effect. The small increase in systolic blood pressure may have resulted from a noradrenergic effect of 2-PAM Cl.

EXPERIMENT II - ATROPINE

The exact same battery of tests of tracking performance, visual function and cardiovascular function were administered in a separate experiment involving 10 young male volunteers given three intra-muscular injections, one each of saline, 2 mg atropine/70 kg body weight and 4 mg/70 kg body weight. All drugs were administered double blind according to a Latin square design. The details of this experiment can be found in the annual report of Contract No. DAMD17-83-G-3198, 1984, and in Haegerstrom-Portnoy, et al. (1986,). The results of the study demonstrated that a systemic dose of atropine in a 4 mg dose produces a statistically significant loss of tracking performance on the BLASER tracking task. The performance loss occurred a relatively long time after injection for both light and dim ambient lighting conditions and was significantly reduced only at the tracking session which began 2.5 hours after injection. At this late tracking session, the subjects given 4 mg of atropine produced about a 75 % increase in the tracking errors (defined as the standard deviation of the absolute tracking errors) both in the light and the dark.

The 4 mg dose of atropine did not produce any more cardiovascular effect than the 2 mg dose, either on pulse rate or blood pressure, indicating that the 2 mg dose already produces vagal block. The cardiovascular effects of atropine were reflected in the subjects' estimates of intoxication which followed the same time course as the pulse rate changes and also showed no difference in peak effect for the two doses of atropine. These measures of intoxication returned to within baseline levels 4-5 hours after drug injection.

The visual side-effects showed a much slower time course and demonstrated more changes with the higher dose. Both pupil size and lens

accommodation changes showed signs of the drug up to 48 hours later. The combination of dilated pupils and decreased focusing ability at near produced significant changes in near visual acuity for the 4 mg dose in this group of young men. Distance vision was unaffected by atropine as expected.

The time course of the various measures are shown as percent change from baseline for the 4 mg atropine dose in Figure 7. The figure shows results for horizontal tracking errors in the dark ambient condition, pulse rate, subjective "high" rating, pupil size and lens accommodation. The increase in tracking errors clearly follows a similar time course to the visual changes and does not follow the pulse rate or "high" rating. We speculate that the drug-induced fatigue, which is a very apparent side effect of atropine, contributed to the loss of tracking performance. The tracking was done at optical infinity and we, therefore, do not think that the visual side-effects contributed to the tracking loss since the distance vision measures were unaffected by the drug.

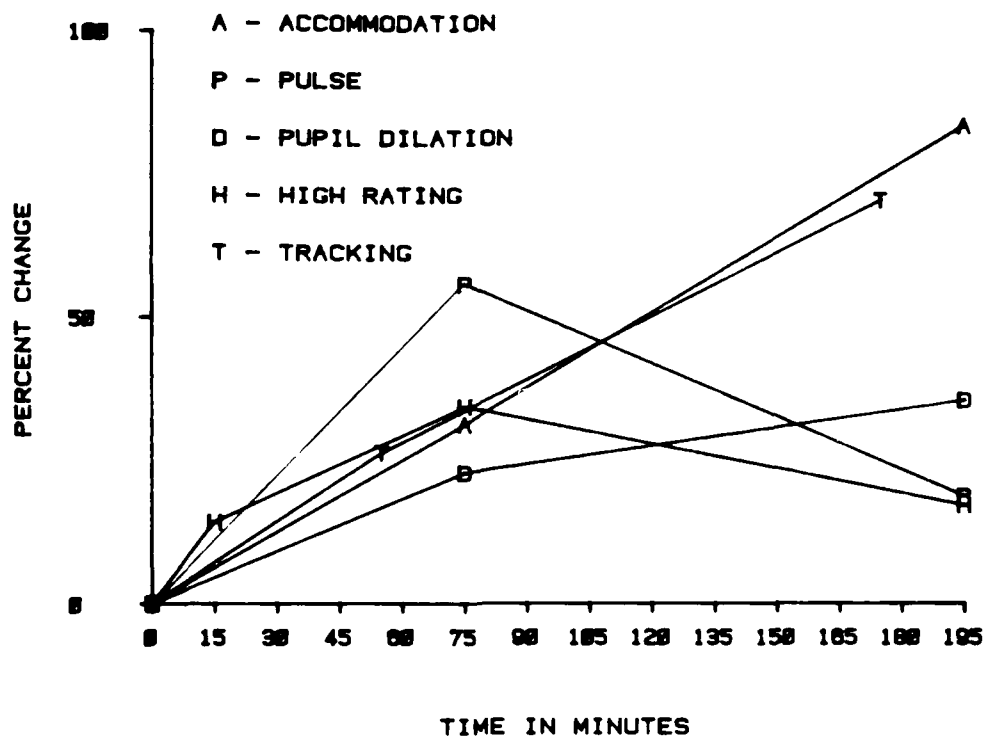


Figure 7. The average percentage change in function after a 4 mg dose of atropine is shown as a function of time after injection for several measures: A=accommodation; P=pulse rate; D=pupil size; H=subjective "high" rating; T=tracking scores under dim ambient illumination; N=10.

The atropine study showed that young men can perform a hand-eye tracking task while under the influence of atropine up to 4 mg even though their performance efficiency decreased. The 2-PAM Cl study showed absolutely no effect of that drug on tracking performance. We would, therefore, anticipate that the combination of the two drugs should produce no further changes than atropine alone.

EXPERIMENT III - COMBINATION STUDY

Subjects and Drug Administration

Ten male volunteers participated in this study. They varied in age between 22 and 33 years of age, 27 being the average. They ranged in weight from 141 to 177 lbs (average 154.2 lbs). All were high school graduates and most had attended a few years of college (average 13.7 years of education). All volunteers were light users of alcohol, four of them used marijuana infrequently while the rest did not use the drug. Only one person smoked cigarettes.

The volunteers were told not to use any drugs during the period of experimentation (including alcohol, tobacco or caffeine). In addition, they did not smoke any marijuana at least two weeks prior to the experiment. Urine testing for THC was performed on each of the nine drug days. No positive results were found at any time.

All volunteers completed a health history questionnaire (Appendix 1) and a drug use form (Appendix 2). Each subject received a complete eye examination as well as measurement of blood pressure and pulse rate. The subjects were then interviewed by a psychiatrist and found to be in good mental and physical health. Each volunteer signed a consent form and received a copy of the experimental subjects' bill of rights.

During a period of 5 weeks, each subject received 9 dose combinations of atropine and 2-PAM Cl. The drugs were given in intra-muscular injections in the upper thigh. Each drug day, two injections, one in each thigh were given.

The doses were:

1. Double placebo (saline)
2. 600 mg/70 kg 2-PAM Cl and placebo
3. 1200 mg/70 kg 2-PAM Cl and placebo
4. 2 mg/70 kg atropine and placebo
5. 4 mg/70 kg atropine and placebo
6. 2 mg/70 kg atropine and 600 mg/70 kg 2-PAM Cl
7. 2 mg/70 kg atropine and 1200 mg/70 kg 2-PAM Cl
8. 4 mg/70 kg atropine and 600 mg/70 kg 2-PAM Cl
9. 4 mg/70 kg atropine and 1200 mg/70 kg 2-PAM Cl

Injectons were spaced 72 hours apart to allow all drug effects to dissipate and all measured functions to return to baseline. All drug administration was double-masked, according to a Latin square design. Only the physician who gave the injections was aware of the dose.

COMBINATION STUDY METHODS I

Visual Functions

The following visual functions were measured 30 minutes before drug injection and at five times after injection; 105 min, 270 min, 345 min, 24 hours and 48 hours:

1. Distance Visual Acuity, High and Low Contrast
2. Near Visual Acuity, High and Low Contrast
3. Pupil Size and Response
4. Accommodative Amplitude in Primary, Up and Down Gaze
5. Color Confusion (Desaturated D-15)
6. Stereopsis

In addition, specialized tests of visual function were measured 30 minutes prior to injection and 110 and 270 minutes after injection. These include:

1. Color Matching
2. Color Temporal Response
3. Blue cone Increment Thresholds
4. Green cone Increment Thresholds
5. Red cone Increment Thresholds
6. Flicker Sensitivity

The following physiological measures were taken 90 minutes prior to

injection and at the noted times after injection (15, 30, 45, 60, 70, 80, 90, 180, 210, 220, 230, 240, 360 min, 24 hours and 48 hours):

1. Pulse rate
2. Systolic Blood Pressure
3. Diastolic Blood pressure

Each subject offered subjective ratings of pain at the injection site and "high" rating at the following times: 60 min before, 15, 30, 45, 180, and 360 minutes after drug injection, and also 24 and 48 hours after injection.

1. Subjective "high" rating
2. Pain rating

Cognition and memory tests were also administered at the times indicated next to each function below:

1. Stroop test:
-105, +45, +170 min, 24 hours and 48 hours
2. 5 Item Acquisition and Recall:
+180 min, (acquisition), +185 min, 24 hours, 48 hours (recall)
3. Short Story Acquisition and Recall:
+180 min, (acquisition), +185 min, 24 hours, 48 hours (recall)
4. Controlled Oral Word Association:
+180 min, 24 hours, 48 hours
5. Digit Span-Forward and Backward:
+180 min, 24 hours, 48 hours
6. PASAT:
+180 min

METHODS-COMBINATION STUDY

BLASER

The BLASER simulator described in the 2-PAM C1 methods section was slightly modified for the combination experiment. In all previous studies, the scale model tank moved horizontally with a fixed angular velocity. In order to make the tracking task more difficult, the track was rebuilt to include three equi-distant hills. The use of the hills changes the task from involving only horizontal motion and also introduces variable velocity. The scale model tank moved at a simulated distance of 1.2 km at an average velocity of 5.6 mrad/s (16 miles/hour). The tank started moving out of view of the subject, whose task it was to swing the designator tracking device onto the target on the tank and push a button indicating that he had acquired the target. This acquisition time was computed for each trial, in addition to horizontal and vertical tracking scores, defined as the standard deviation of the mean absolute tracking error in micro-radians. Tracking was performed under two ambient light levels as before (340 and 0.085 cd/m²).

The same sequence of training was used for the combination experiment as previously used for both the atropine alone and 2-PAM C1 alone studies. Each subject underwent two days of practice; the first day involved 11 1 minute trials each for light and dim conditions. The second day of training followed the exact same time protocol as each of the subsequent drug days. Each tracking session consisted of 10 15-second trials in the light condition, followed by a 5 minute low-light adjustment period and then another 10 15-second trials under dim ambient conditions. After each

tracking trial, summary information was given to each subject in the form of percent time on target, error score and acquisition time. Each subject participated in three tracking sessions each day - one session prior to drug injection, one session which began 60 minutes after drug injection, and the final session which started 210 minutes following drug injection. Each tracking session lasted between 30-40 minutes. These testing times were chosen to "fill in" the gaps in the time course of atropine effects on tracking based on our previous experience involving BLASER.

On experimental days, the subjects wore disposable EKG electrodes and had their EKG continuously recorded. The horizontal and vertical tracking scores and the acquisition times were analyzed by the method of paired comparisons t-test (Bailey, 1981). Each subject's score prior to drug injection was subtracted from his score after injection and, in addition, the change in tracking score on the day each subject received placebo was subtracted out individually. We then tested to see if the average drug-induced change in tracking score or acquisition time was significantly different from zero. Even though the tracking scores themselves were not normally distributed, the difference in the tracking scores post-pre drug were more normally distributed. Analysis of variance on the log-transformed scores was performed in addition.

COMBINATION RESULTS I

BLASER

Tracking performance was defined as the standard deviation of the absolute angular tracking error in micro-radians and evaluated for both horizontal and vertical tracking performance for the light and dark ambient lighting situation. To simplify presentation of the massive amounts of data collected in this study, we have chosen to show only 4 of the 9 dose conditions in the figures; the results for placebo, 1200 mg 2-PAM Cl, 4 mg atropine and the combination of 4mg atropine and 1200 mg 2-PAM Cl. Detailed data tables showing all the individual data for all dose levels can be found in appendix 5. In the following discussion, statistical significance refers to t values having associated p values less than 0.05 using the method of paired comparison with the results for placebo subtracted out.

The time course of horizontal tracking performance for the four selected drug doses is shown in Figure 8. The loss of performance for 4 mg in the light at 60 minutes after injection is significant as is the tracking loss for the combination dose at 60 minutes in the light. 2-PAM Cl does not affect tracking performance consistent with our previous results. In the dark, the tracking performance is considerably worse and both 4 mg of atropine and the combination show significant losses at the 60 minute testing time. In addition, the performance after the combination dose remains significantly affected at the second test time 210 minutes after injection. The results for 1200 mg 2-PAM Cl and placebo are indistinguishable.

The combination appeared to produce more of a loss in tracking performance than the 4 mg atropine dose alone, suggesting synergism between atropine and 2-PAM Cl, since 2-PAM Cl by itself dose not affect performance in the least. We tested for potential synergism by performing non-parametric analysis of variance (Friedman) on the drug-induced change for 4 mg atropine alone, 4 mg atropine plus 600 mg 2-PAM Cl and 4 mg atropine plus 1200 mg 2-PAM Cl for each testing time. For the Friedman test, the data are placed in a two-way table having N rows representing subjects and k columns representing doses. The data are converted to ranks with the scores in each row ranked separately. If no synergism exists, the distributions of ranks in each column should be identical, but if synergism exists, the rank totals will vary from column to column. The Friedman test thus determines whether the column ranks differ from each other. The analysis revealed no significant synergism for the tracking task (but see below for vision functions).

The results for vertical tracking errors are shown in Figure 9. for both light and dark conditions (note change in ordinate scale). The performance losses reach statistical significance only for the 210 minute test period for both 4 mg atropine and the combination. No synergism was noted.

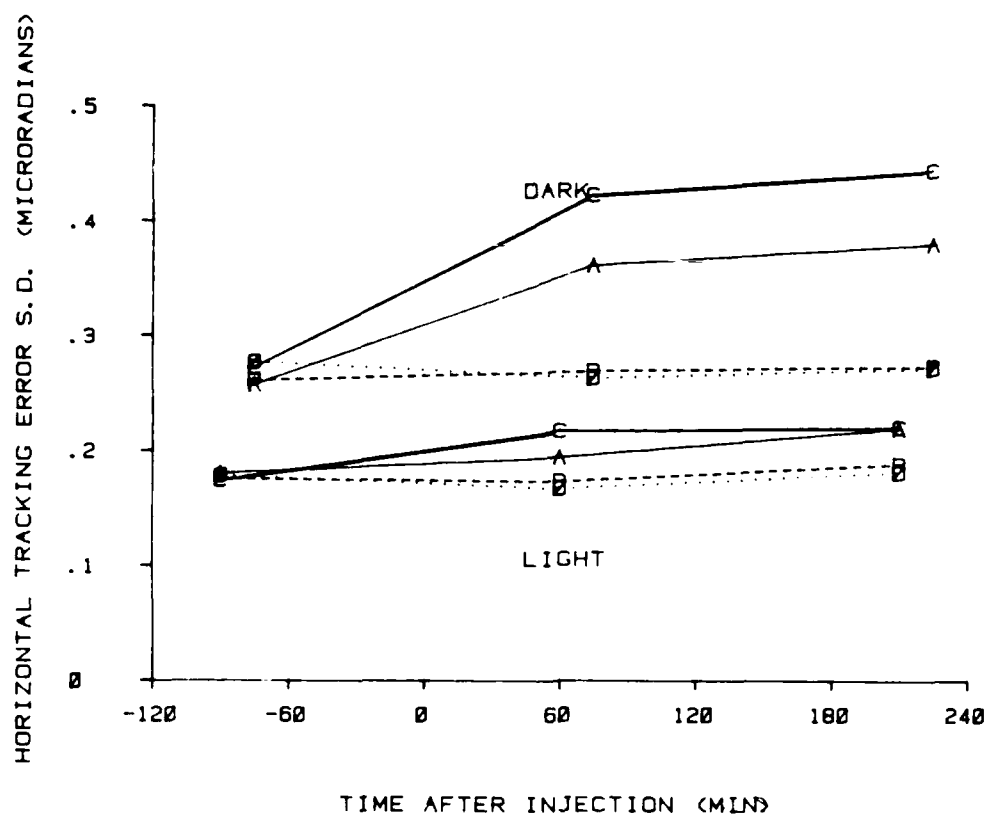


Figure 8. The time course of changes in horizontal tracking performance produced by injection of 4 mg atropine (A), 1200 mg 2-PAM Cl (P), placebo (O), and combination dose of 4 mg atropine and 1200 mg 2-PAM Cl (C) (N=10).

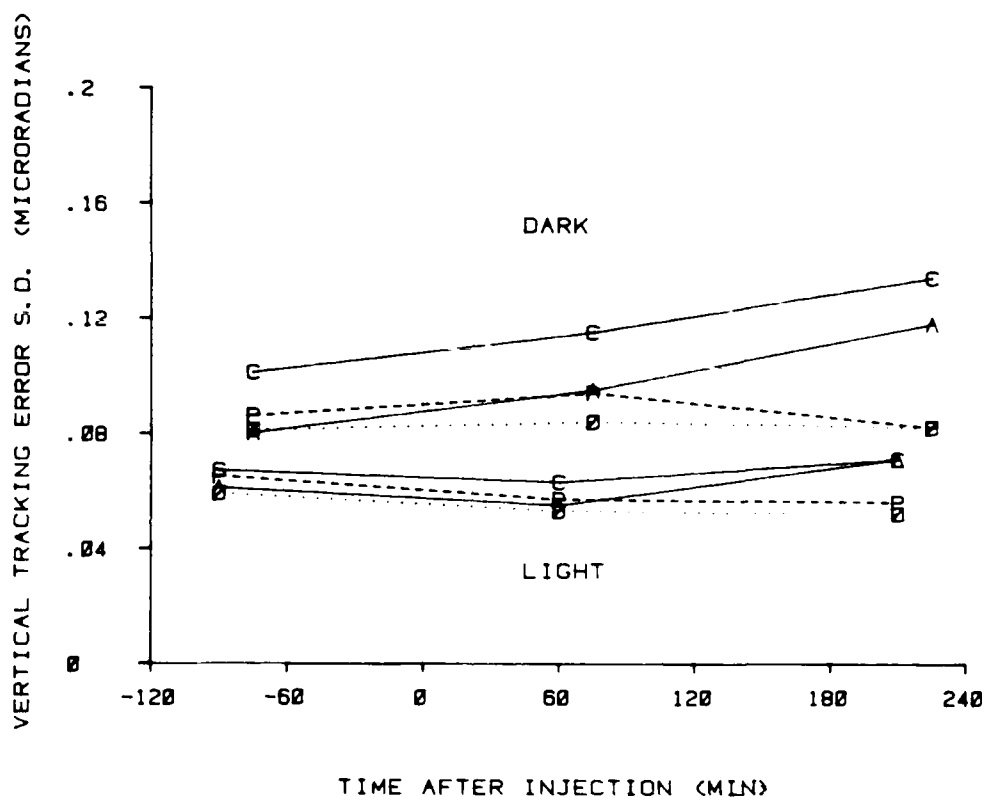


Figure 9. The time course of changes in vertical tracking performance produced by injection of the four representative doses: 4 mg atropine (A), 1200 mg 2-PAM chloride (P), placebo (O) and the combination dose of 4 mg atropine and 1200 mg 2-PAM chloride (C) (N=10).

Another, more gross, method for evaluating tracking performance is to determine percent time on target. The results are shown in Figure 10 and generally show the same overall picture of decreasing efficiency of tracking performance after both 4 mg atropine and the combination. The results for the 210 minute period are significantly different for both these drug doses for both light and dark conditions. In addition, the combination data in the dark at 60 minutes is statistically significant. Acquisition time, shown in Figure 11, was unaffected by all drug doses.

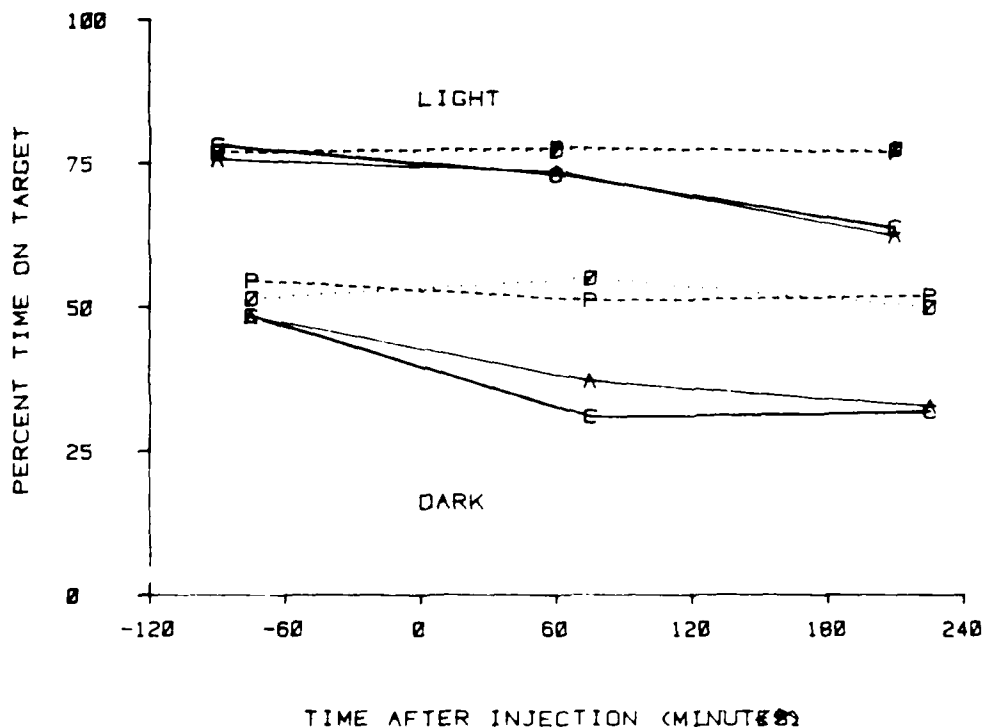


Figure 10. The time course of changes in tracking performance, determined by percent time on target, produced by injections of 4 mg atropine (A), 1200 mg 2-PAM Cl (P), placebo (O) and combination dose of 4 mg atropine and 1200 mg 2-PAM Cl (C) (N=10).

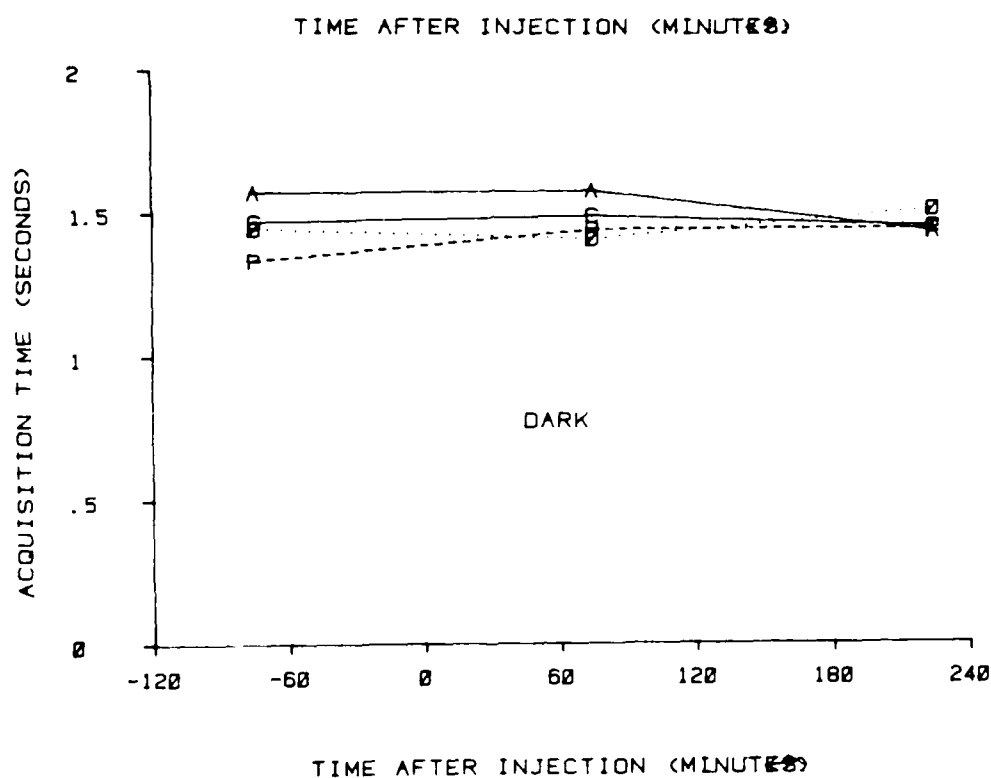
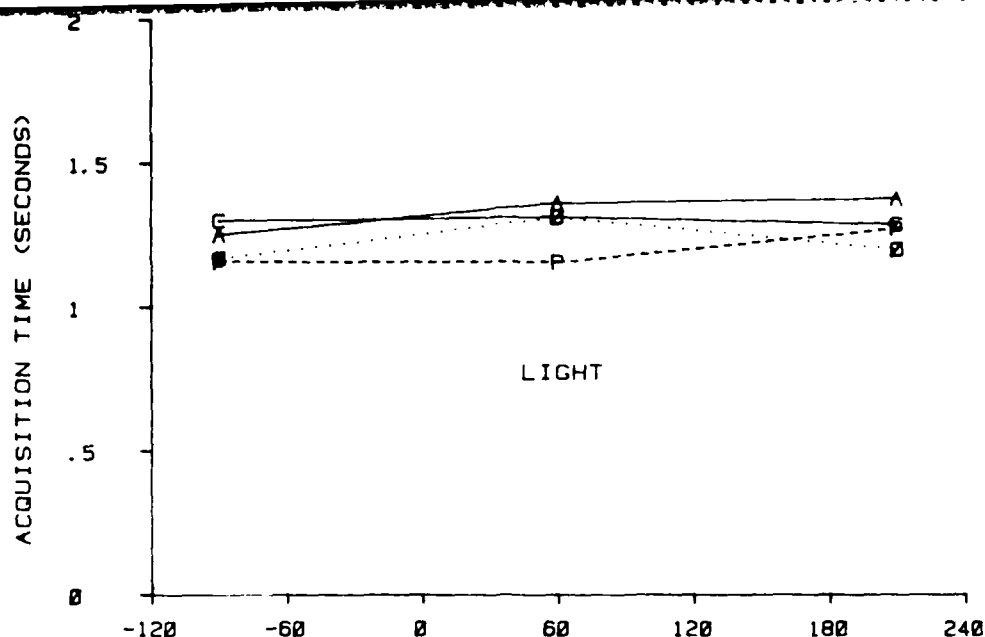


Figure 11a & b. The time course of changes under light conditions (upper panel) and dark conditions (lower panel) for acquisition time produced by injection of the four representative doses (A=4 mg atropine, P=1200 mg 2-PAM Cl, O=placebo, C=combination 4 mg atropine/1200 mg 2-PAM Cl) (N=10).

The tracking losses shown in the previous figures appear to deteriorate as the day goes on without showing any signs of recovery. This picture is misleading, however. The testing times for the combination experiment were chosen to straddle the testing times used in our previous study with atropine alone. If the tracking losses are converted to percent change (since the combination study tracking situation was quite different and more difficult) and the data on atropine effects are plotted for both studies, the result in Figures 12 and 13 are obtained. The data points at 30 minutes and 150 minutes are from the previous study, while the data points at 60 and 210 minutes are from the combination study. Note that these graphs represent only the effects of atropine on horizontal tracking performance. The letter 4 on the graphs show the results for 4 mg and the 2 shows the data for 2 mg atropine (placebo=0). It is clear from these composite graphs that maximum loss of performance occurs for 4 mg atropine between 2 and 3 hours after injection (possibly as early as 2 hours). In addition, recovery of performance is evident. The changes seen in the 2 mg data are not statistically significant. Comparing the results for the light condition with the dark condition, it is clear that although the maximum loss is about the same (75 %) the percent losses for the dark condition are higher for the earlier test times. For example, at 60 minutes the loss in the light is only 8 %, while tracking performance in the dark has deteriorated by 40 %.

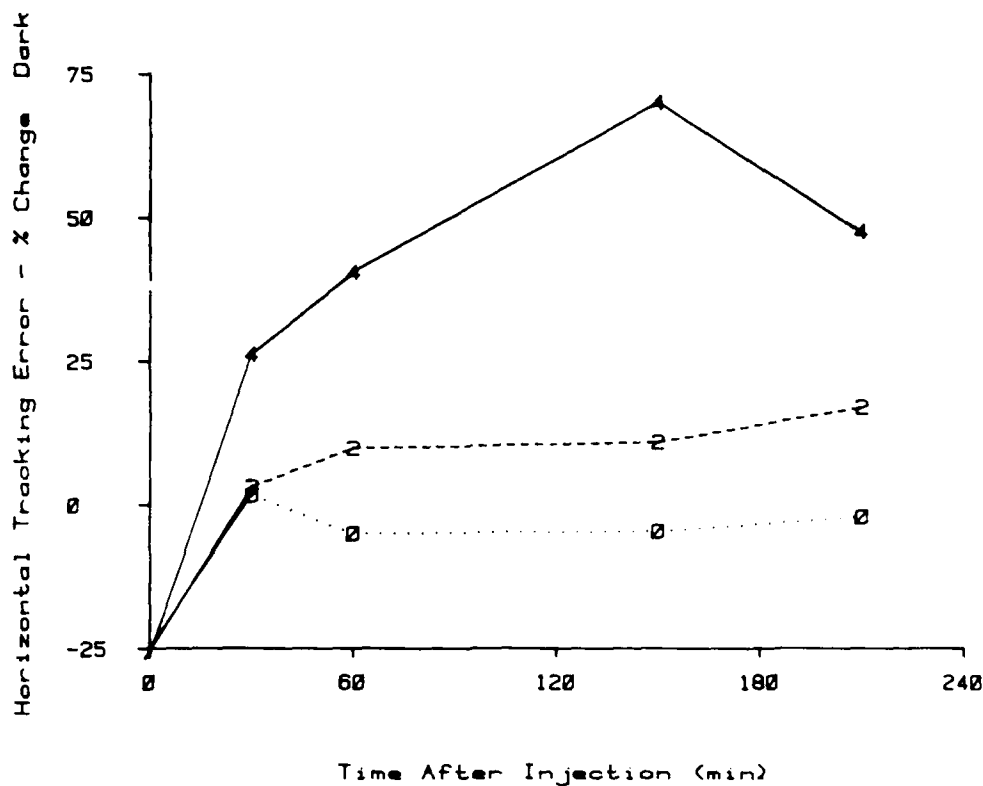


Figure 12. The average percentage change in horizontal tracking errors under dark conditions after injections of 2 and 4 mg atropine (placebo=0) (N=10).

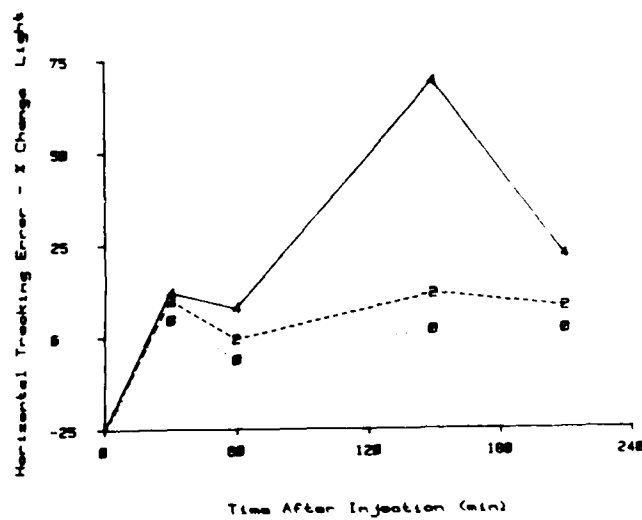


Figure 13. The average percentage change in horizontal tracking errors under light conditions produced by injection of 2 and 4 mg atropine (placebo=0) (N=10).

To summarize the results on BLASER hand-eye tracking performance: atropine produces significant loss of tracking efficiency only for the higher 4 mg dose. 2-PAM Cl has no effect at all on performance. The combination of atropine and 2-PAM Cl is statistically the same as 4 mg atropine alone, even though the data suggests some synergism between atropine and 2-PAM Cl. The time course of the effects peaks around 2 hours after injection with some recovery evident at the 3.5 hour testing period.

COMBINATION STUDY RESULTS II

Physiological Measures

Pulse rate

The pulse rate changes for the four representative drug doses are shown in Figure 14. The graph shows pulse rate to be elevated 30 minutes after injection for both the 4 mg atropine dose alone and for the combination of 4 mg atropine and 1200 mg 2-PAM Cl. The maximum change occurs around 60 minutes and amounts to about 30 beats/min. Similar changes were seen in our previous study where 4 mg of atropine produced a maximum increase of 35 beats/min. Recovery is evident around 4 hours after injection. All data points for atropine alone and the combination between 30 minutes and 4 hours post injection are statistically significant. Pulse rate is completely unaffected by both placebo and 1200 mg 2-PAM Cl alone, consistent with the results of our earlier study involving 2-PAM Cl alone. The change in pulse rate with placebo subtracted out is shown in the lower panel of Figure 14; this graph clearly demonstrates the minor effect of 2-PAM Cl and the similarity between atropine alone and in combination.

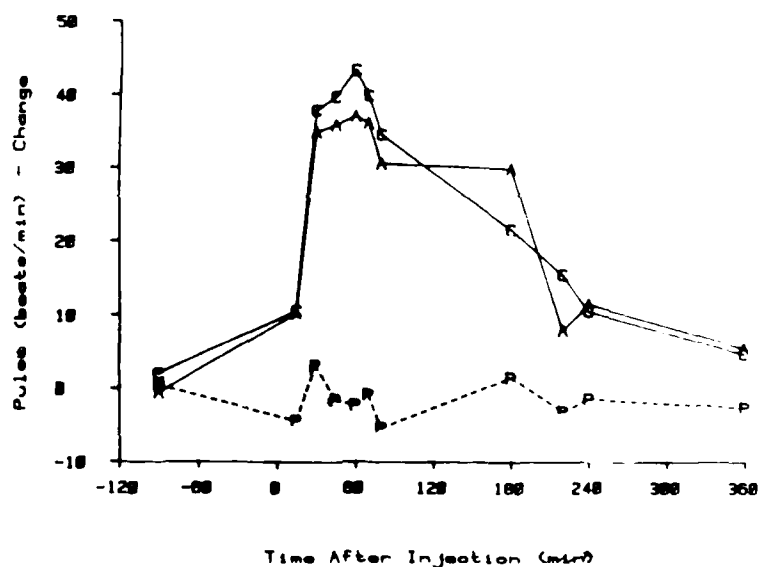
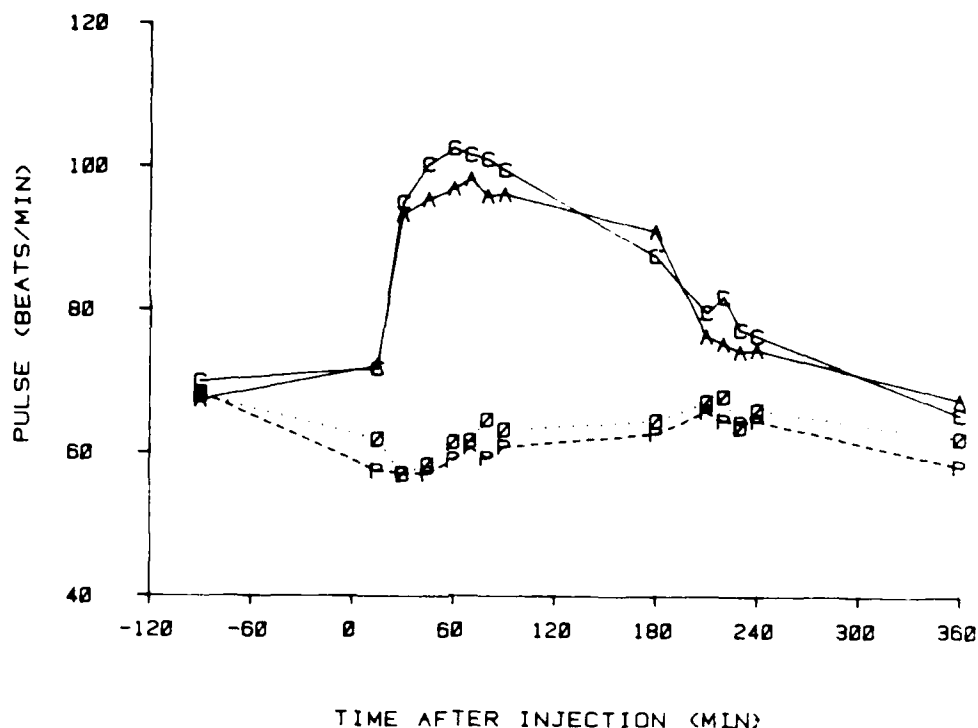


Figure 14. (Upper panel) The time course of change in pulse rate (beats/min) produced by injection of the four representative doses: A = atropine 4 mg; P = 2-PAM Cl 1200 mg; O = placebo; C = combination dose 4 mg atropine and 1200 mg 2-PAM Cl. Lower panel shows the change in pulse rate with placebo subtracted out (N=10).

High rating

The pulse rate changes are reflected in the subjects own estimates of degree of intoxication (Figure 15). Several times during each drug day, each subject was asked to rate his state of intoxication on a scale of 0 to 100 where 100 represents as "high" as he had ever been on any drug or drug combination. The ratings shown in Figure 15 are not very high, indicating that 4 mg atropine alone or in combination with 1200 mg 2-PAM Cl is not a particularly intoxicating drug. By comparison, the equivalent of 2 drinks of alcohol produces ratings around 50-60 on this scale. The time course of the high rating follows closely the time course of the pulse rate changes and does not show any difference between atropine alone or in combination with 2-PAM Cl. The small changes seen with 1200 mg 2-PAM Cl are not statistically significant.

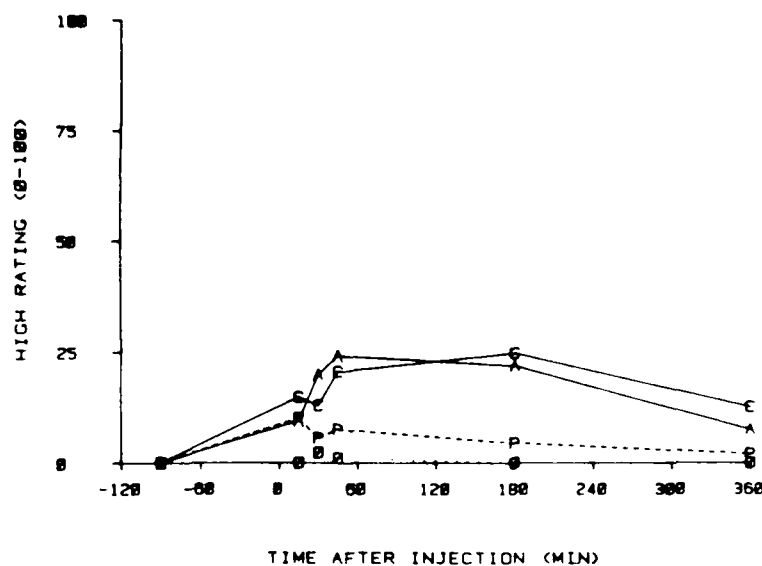


Figure 15. The time course of subjective rating of intoxication ("high") produced by injection of the four representative doses (N=10).

Systolic blood pressure

The changes in systolic blood pressure are shown in the upper panel of Figure 16 for the four representative doses. Both 1200 mg 2-PAM Cl and the combination dose produce significant elevation of systolic blood pressure within 2 hours of injection. The changes seen for 4 mg atropine alone are not statistically significant but some of the variations in the placebo data are, prompting us to subtract the results for placebo from the other doses. The results are shown in the lower panel of Figure 16. The small initial increase in blood pressure seen for atropine alone is not significant while the later decrease produced by subtracting out placebo is statistically significant between 3 and 4 hours. No significant increases are found for the 1200 mg 2-PAM Cl data. However, the combination of atropine and 2-PAM Cl causes significant changes in systolic blood pressure. All five data points between 30 and 90 minutes post injection are statistically significant. Again, the data suggests synergism between the two drugs. This effect is more obvious in the diastolic blood pressure measurements.

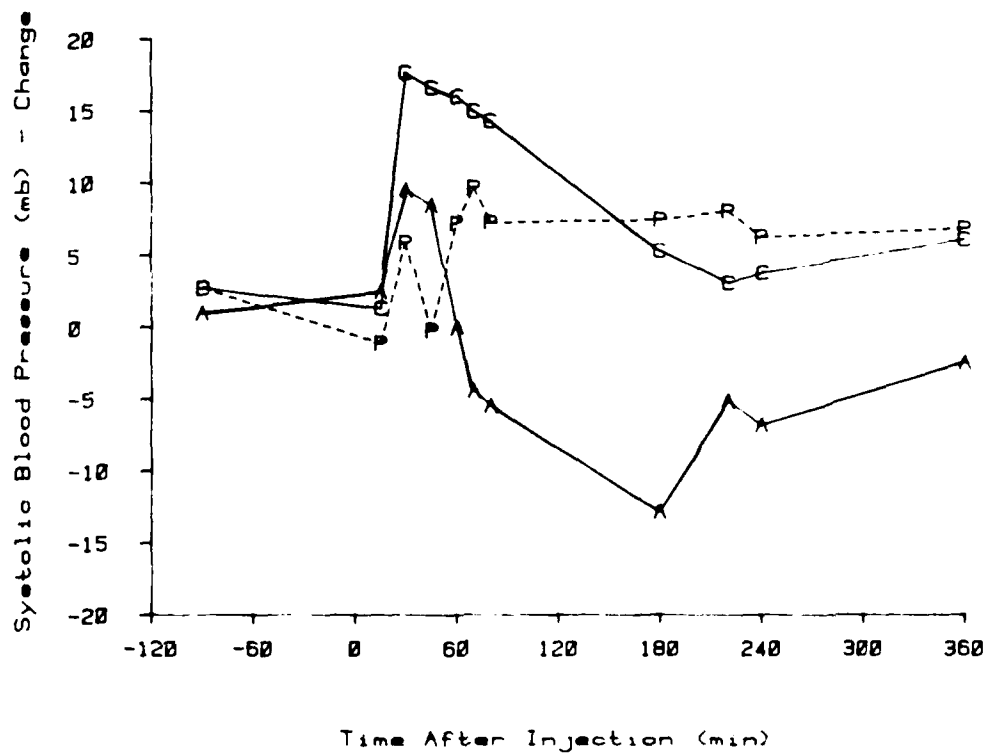
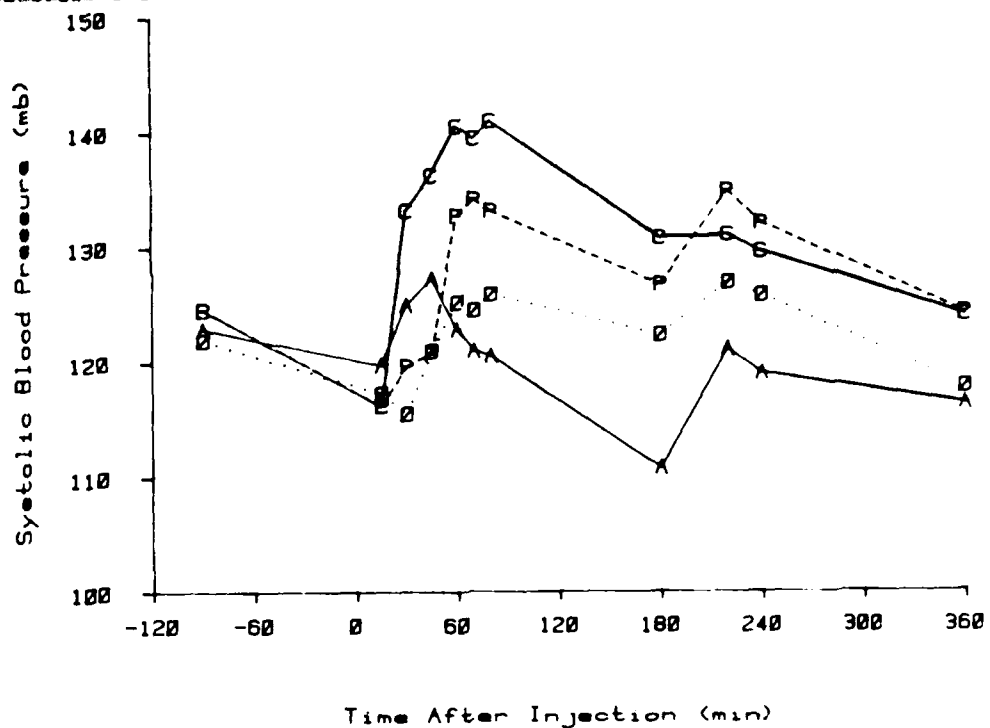


Figure 16. The time course of changes in systolic blood pressure produced by injection of the four representative doses (upper panel); results after placebo data subtracted from other doses (lower panel) (N=10).

Diastolic blood pressure

The drug induced changes in diastolic blood pressure for 4 mg atropine, 1200 mg 2-PAM Cl, combination and placebo are shown in the upper panel of Figure 17. Atropine and 2-PAM Cl separately produce increases in diastolic blood pressure with slightly different time courses. The changes for 2-PAM Cl are statistically increased between 60 and 90 minutes post injection, while the atropine induced elevations are significant between 60 and 240 minutes. The results for placebo have been subtracted out in the lower panel of Figure 17 to more clearly show the drug induced changes separate from diurnal and other non-drug related effects on blood pressure. There seems to be some synergism between the drugs. For example, around 60 minutes after injection, atropine alone produced an increase of around 12 mm Hg while 2-PAM Cl produced a 7 mm increase; the combination if additive would be expected to produce 21 mm increase, instead close to 30 mm rise is seen in the diastolic blood pressure. In fact, Friedman analysis of variance performed using the average data for all time periods and ranking results for 1200 mg 2-PAM Cl, 4 mg atropine and the combination indicates a significant synergism between the drugs. The mechanism for this interaction is not clear at all and is, in fact, not expected from the pharmacology for these two drugs. The increase in diastolic blood pressure of 30 mm Hg did not represent a health risk to these subjects whose baseline pressures averaged 75 mm Hg. However, if this drug combination were given to older subjects or others who already have increased diastolic pressure, there is cause for concern. The elevation in diastolic pressure was quite long lasting and did not return to baseline until 5 hours after injection.

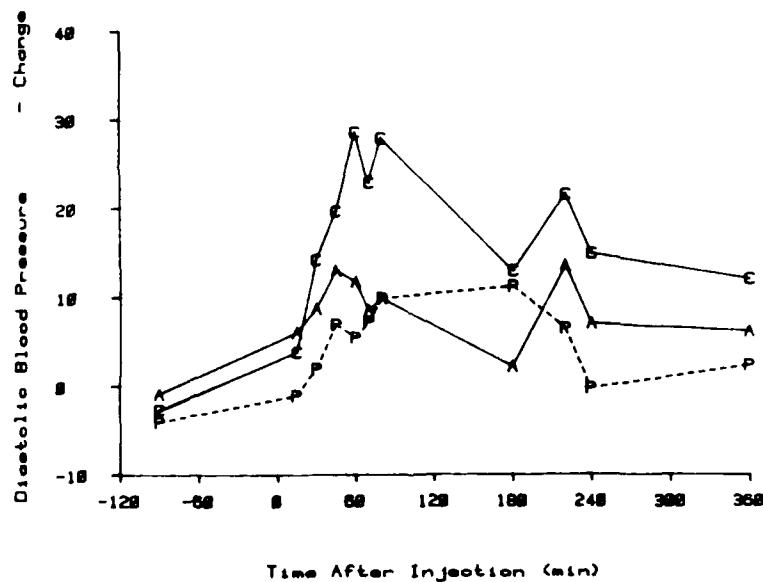
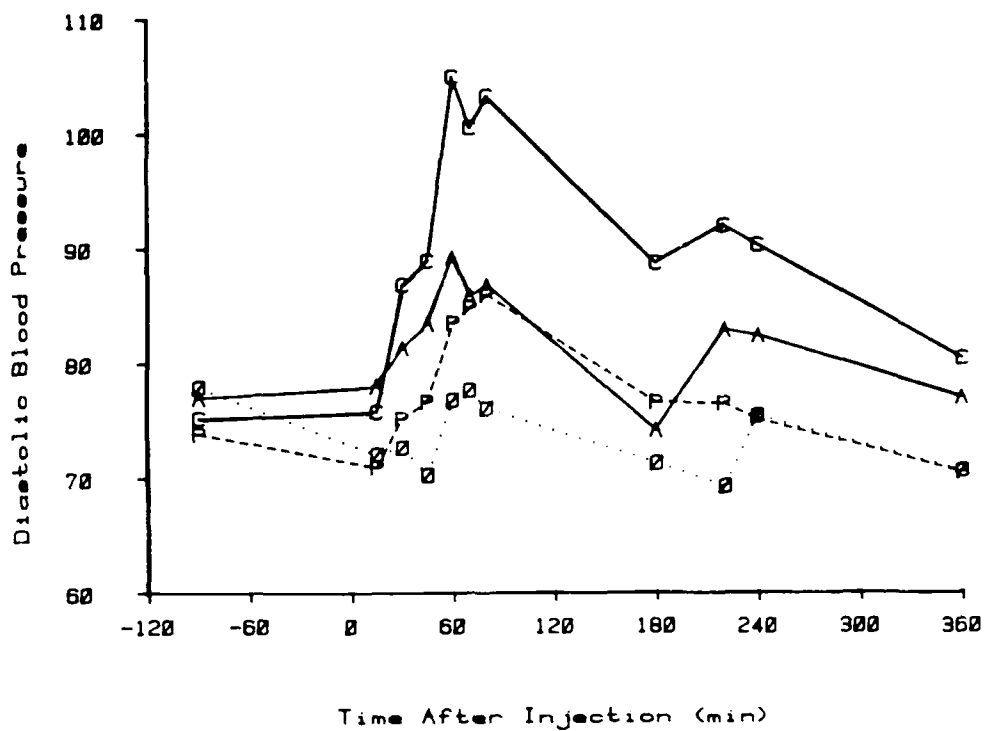


Figure 17. (Upper panel) The time course of changes in diastolic blood pressure produced by injection of the four representative doses; (upper panel) to more clearly show the drug-induced changes, placebo results have been subtracted out (N=10).

Subjective pain rating

Our previous experiment involving 2-PAM Cl had indicated that the intramuscular injection of this drug is quite painful. We, therefore, asked each subject to rate pain at the injection site on a scale of 0 to 4. The results are shown in Figure 18. Atropine and placebo produce negligible effects while 2-PAM alone or in combination causes the ratings to be significantly elevated even 6 hours after injection. The ratings returned to baseline the following day, 24 hours after injection.

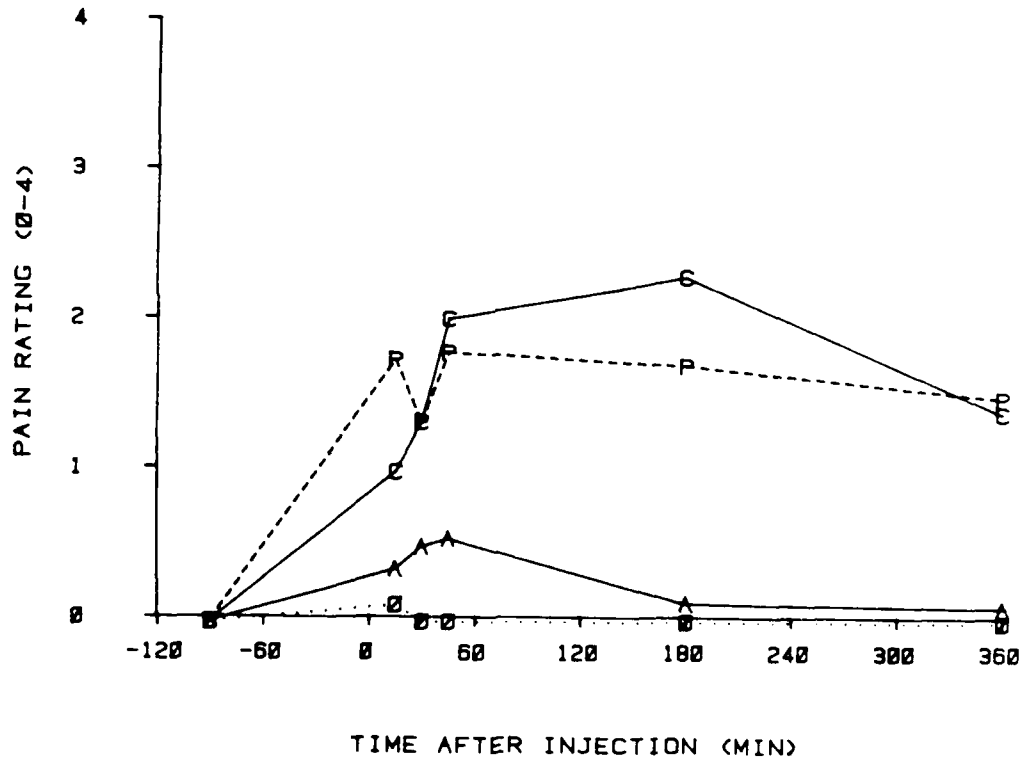


Figure 18. The time course of subjective rating of pain produced by injection of 4 mg atropine, 1200 mg 2-PAM Cl, placebo, and combination dose (N=10).

COMBINATION STUDY III

Visual Acuity

Distance (6m)- High and low contrast.

Visual acuity was measured at 6 m using the Bailey-Lovie acuity chart. This chart (see Fig. 19) has five letters on each row, geometric spacing between rows such that each line represents a size change of 0.1 log MAR (minimum angle of resolution). Snellen notation 20/20 corresponds to log MAR of 0 and Snellen 20/200 corresponds to log MAR of 1.0. This kind of chart presents the same task to the subject at each size - this is not the case with standard Snellen acuity charts that have different number of letters on the lines depending on size. Acuity was measured using a high contrast version (90 % contrast) and a low contrast version (10 %). The low contrast chart is expected to be more sensitive to changes than the high contrast chart. The acuity score for each person represents the total number of letters read correctly (each letter is worth 0.02 log MAR).

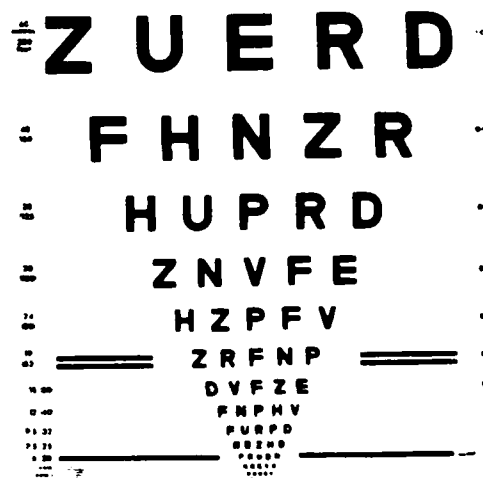


Figure 19. (Picture of high and low contrast visual acuity chart.)

The time course of changes in distance visual acuity produced by 4 mg atropine, 1200 mg 2-PAM Cl, placebo and the combination dose are shown in Fig. 20a for the high contrast chart and Fig. 20b for the low contrast chart. Atropine alone and in combination produces small but statistically insignificant changes in visual acuity, amounting to about a line on the acuity chart. (The only point that reaches significance is post 105 minutes, 4 mg atropine, placebo subtracted out, high contrast, $t=2.81$, $p<0.02$). These small changes may be produced by increased spherical aberration caused by increases in pupil size. Placebo and 1200 mg 2-PAM Cl cause no change at all.

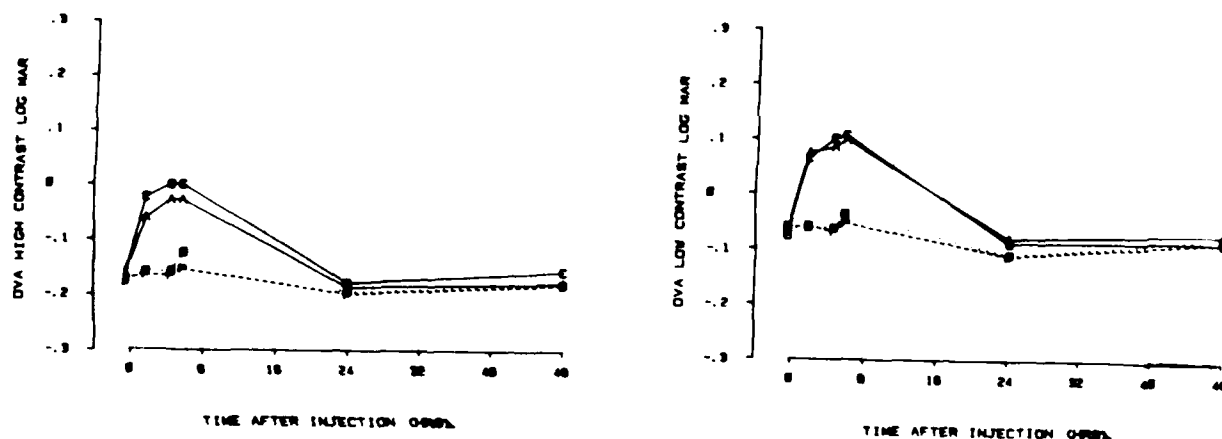


Figure 20a. The time course of changes in distance visual acuity produced by injection of 4 mg atropine, 1200 mg 2-PAM Cl, placebo and combination dose for the high contrast chart. b. Time course of changes in distance visual acuity shown for low contrast chart (N=10).

Visual Acuity Near (40 cm)- High and low contrast

Near visual acuity was measured using Bailey-Lovie charts designed for near use. The testing distance was 40 cm and testing was performed under moderate photopic illumination of 860 lux. The time course of the changes in near visual acuity by the four representative doses is shown in Figure 21a for the high contrast chart (90 % contrast) and in Figure 21b for the low contrast chart (10 % contrast). High contrast near visual acuity is affected both by 4 mg atropine alone and the combination. However, when placebo is subtracted out, the change produced by 4 mg atropine fails to reach statistical significance ($t=2.18$, $p<.1$). The loss of near acuity (about 4 lines on the chart, from the equivalent of 20/12.5 to 20/32) produced by the combination is statistically significant at 105 minutes, 270 and 345 minutes after injection. Recovery occurs the following day. The drug induced changes in low contrast near visual acuity are statistically significant up to 7 hours after injection for both the atropine alone and the combination. The maximum change of about 0.4 log MAR corresponds to acuity changing from the equivalent of 20/16.5 to 20/40. Even though it appears that the combination produces more of a change than 4 mg atropine alone, this difference is not significant. The loss of near acuity is most certainly caused by loss of accommodative ability (see below) As seen in the figure, 2-PAM Cl and placebo produce no change at all.

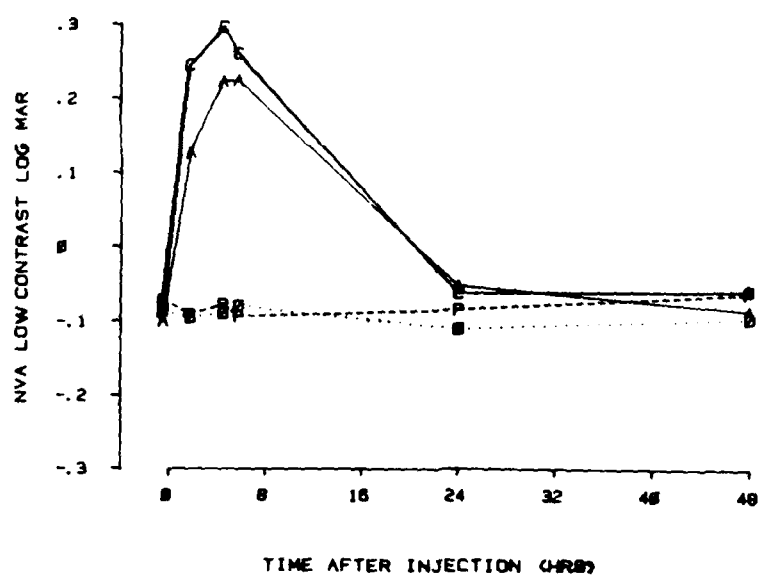
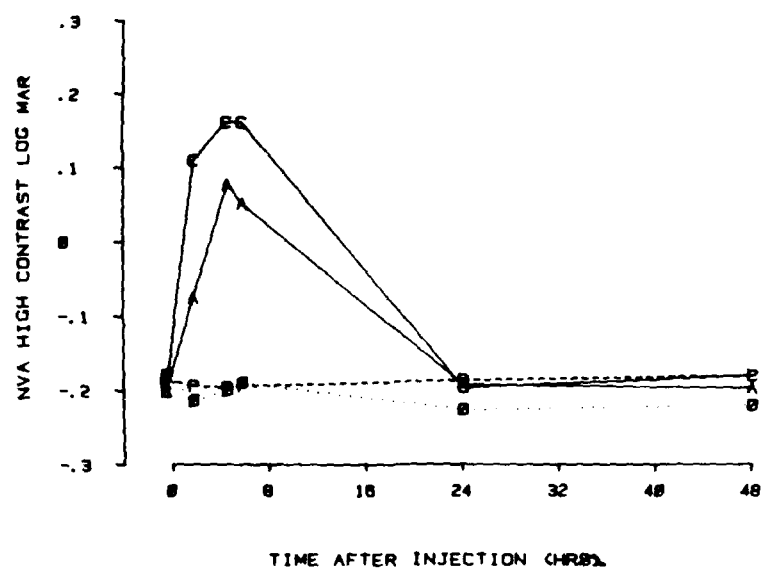


Figure 2la. The time course of changes in near visual acuity for the high contrast chart (90% contrast) produced by injection of the four representative doses; b. The time course of changes in near visual acuity shown for low contrast chart (10% contrast) (N=10).

Accommodative amplitude Primary gaze (straight ahead), Up-gaze (45 °), Down-gaze (45 °)

Accommodation was measured as the nearest point of clear vision using a small detailed target. The amplitude was measured three times for each gaze position and the average taken. We measured accommodative ability in different fields of gaze, because clinical experience has shown that people often need reading additions in the form of bifocals for upgaze before they need it for downgaze. We wanted to quantify this observation, since it might be of importance to pilots who need to read instruments in upgaze.

The time course of accommodative amplitude in diopters ($100/\text{near point cm}$) is shown in Figure 22 a,b and c for upgaze, primary gaze, and downgaze respectively. There is a clear difference in baseline accommodative amplitude upgaze vs downgaze (6.5 D vs about 9 D diopters) verifying the clinical observation. These accommodative amplitudes correspond to 15.4 cm (6.5 D) and 11.1 cm (9 D). Surprisingly, even though the subjects had more trouble accommodating in upgaze prior to the drugs, more of a loss in diopters occurred for downgaze than for upgaze (6.2 D loss vs 4.3 D maximum loss for the combination dose). Part of this difference is caused by a "ceiling effect" since some subjects had such a distant near point in upgaze that we were unable to measure it ($>100 \text{ cm} = <1 \text{ D}$ of accommodation).

For all fields of gaze, 4 mg atropine and the combination dose produce statistically significant loss at all time periods including 24 hours after injection. At the 48 hour measurement time, recovery has occurred. The losses are quite substantial amounting to between 4 and 6 D. For the 270 and the 345 minute measurement periods, 4 out of 6 subjects had less than 1 D of accommodation after injection of the combination dose.

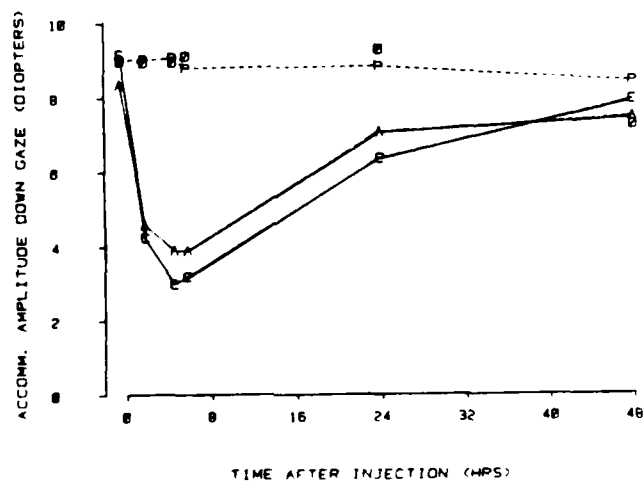
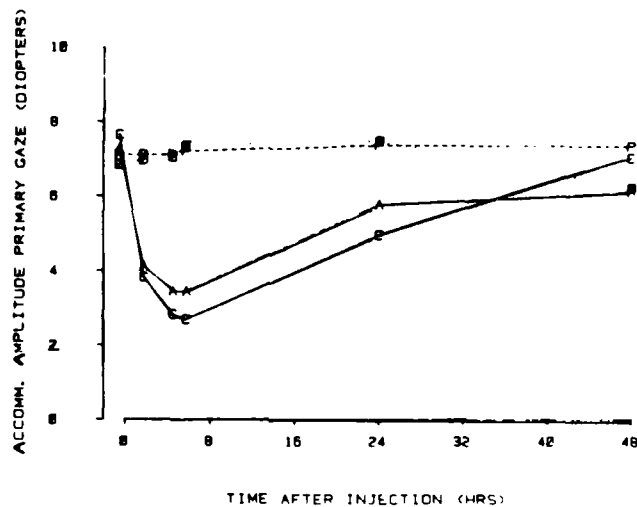
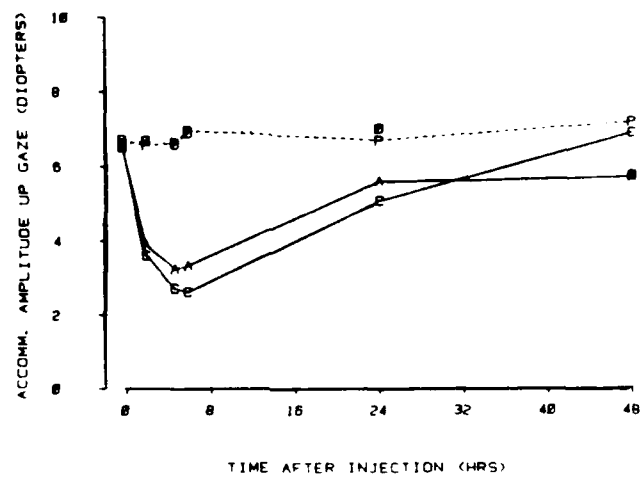


Figure 22a. The time course of accommodative amplitude in diopters (100/near point cm) for upgaze, b. primary gaze and c. downgaze produced by injection of the four representative doses (N=10).

The combination dose appears to produce more of an effect than the 4mg dose of atropine alone in all fields of gaze. This difference in effect is illustrated in Figure 23 which shows change in accommodative amplitude (cm) in primary gaze with placebo subtracted out.

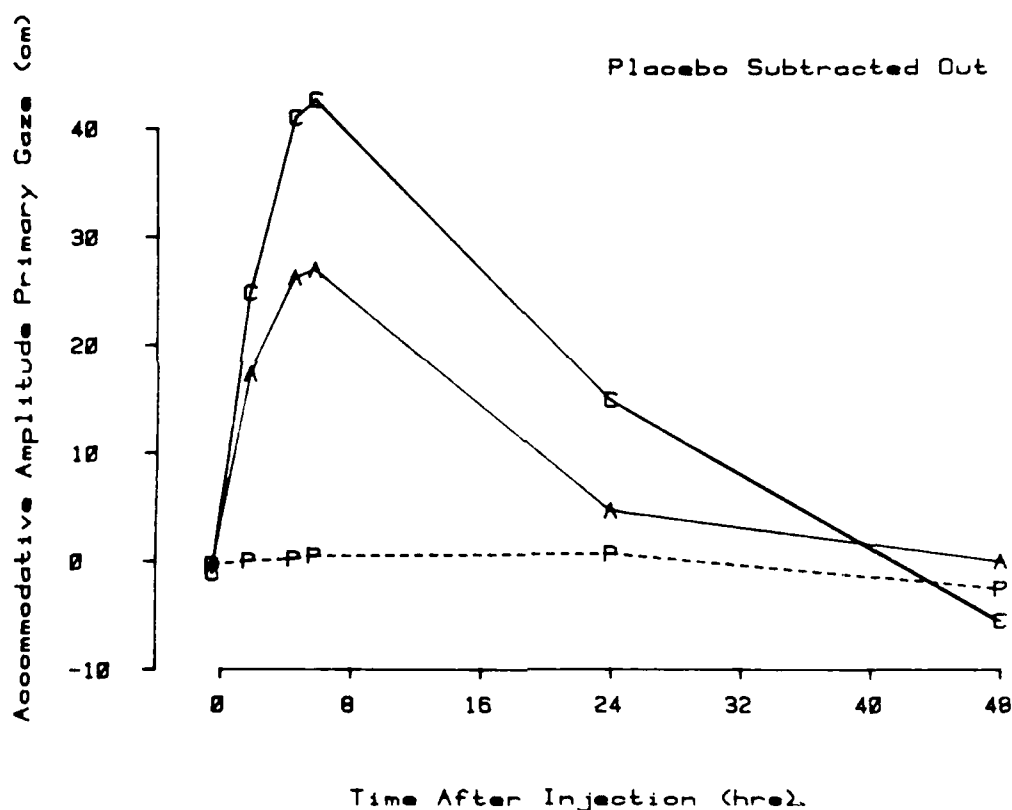


Figure 23. The time course of accommodative amplitude for primary gaze with placebo subtracted out after injection of the four representative doses (N=10).

We evaluated this apparent synergism by performing Friedman analysis of variance comparing the whole time course for 4 mg atropine alone, 4 mg atropine plus 600 mg 2-PAM Cl and 4 mg atropine plus 1200 mg 2-PAM Cl. Significant synergism was found - the combination of 2-PAM Cl and 4 mg atropine produces more accommodative loss than 4 mg atropine alone. 2-PAM Cl alone produces no significant changes in accommodative ability as can be clearly seen in Figure 23. The mechanism for this synergism is unclear. 2-PAM Cl has been reported to have some sympathomimetic effects (REF). The ciliary muscle in the human eye receives primarily cholinergic innervation but also receives a very small, with less than 1 % of ciliary fibers receiving a beta adrenergic input (Goodman and Gilman, 1970; Ruskell, 1973) which when activated would be expected to produce the same effect as atropine (sympathomimetic effects are in the same direction as parasympatholytic effects).

The accommodative losses produced by 4 mg atropine alone in this group of subjects are larger than those found in our previous study involving atropine. The average maximum loss in the present study was 4.3 D of accommodation 270 minutes after injection - in our previous study the average maximum loss was 3.5 D at 195 minutes. These differences can be accounted for by the difference in measurement time. To provide a complete time course of the effect of atropine (4 mg/70 kg body weight), we have combined the results from the present study with that from our previous study involving atropine alone. The results, plotted as percent change are shown in Figure 24. The upper half of the figure shows the time course expressed as % change in diopters and the lower half shows the time course shown as % change in cm.

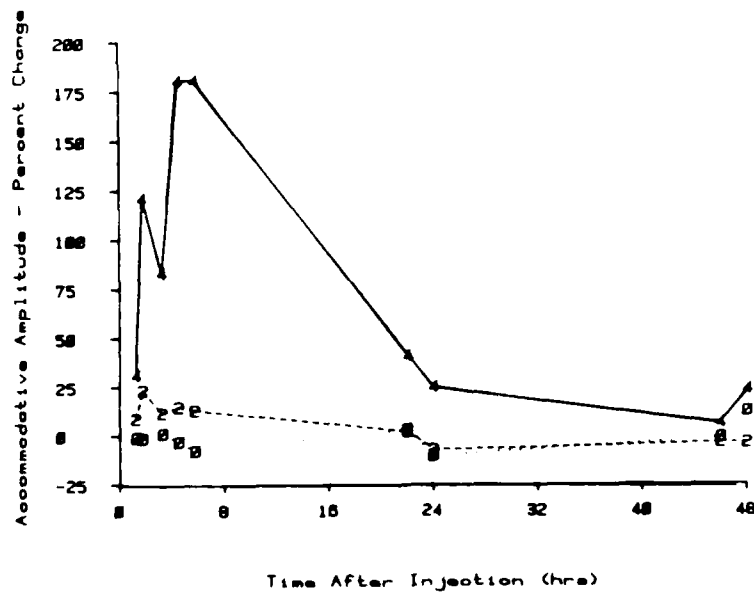
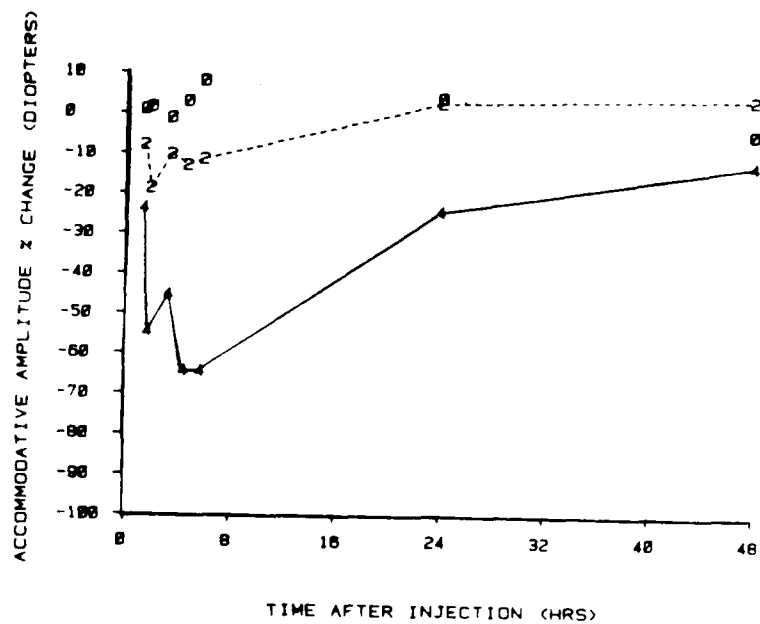


Figure 24a. The time course of accommodative amplitude for the combined results of the new and old studies shown as % change in diopters. b. The time course shown as % change in cm (N=12).

Pupil size and response

Pupil size measurements were performed using a special ruler which contains black half circular disks of different sizes (0.5 mm steps). The examiner matches the half-disks to the subjects' pupils and finds the size that matches most closely. This method is considerably more accurate than just using a mm ruler, since this method takes advantage of the vernier alignment capability of the human visual system which is very accurate. The measurements were performed under moderate photopic illumination of 860 lux. The results of the pupil size measurements are shown in Figure 25. The top half of the figure shows the time course for placebo, 1200 mg 2-PAM Cl, 4 mg atropine and the combination dose. The lower half of the figure shows the same results with placebo subtracted out. Atropine (4 mg/70 kg body weight) and the combination dose produce statistically significant increases in pupil size at the 1.75, 4.50 and 5.75 hour post injection measurement times. The changes are quite small, however, less than 2 mm increase in pupil diameter. These changes by themselves are unlikely to be of any practical significance. 2-PAM Cl produces no statistically significant change in pupil size.

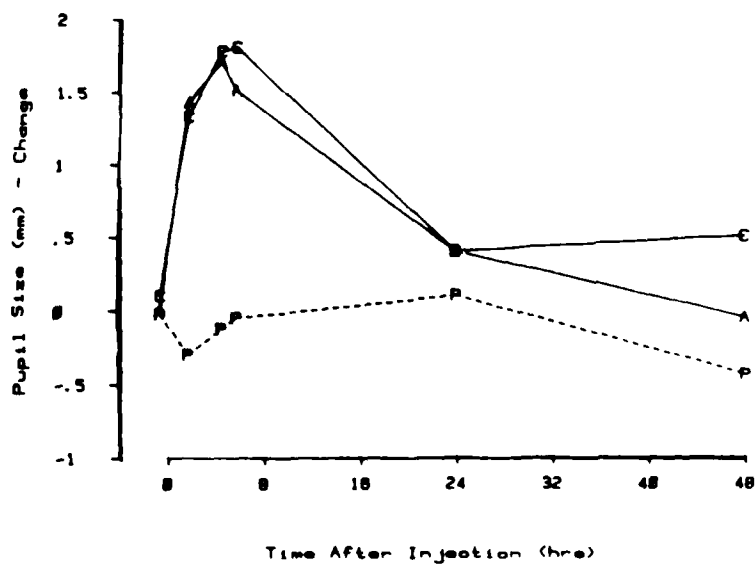
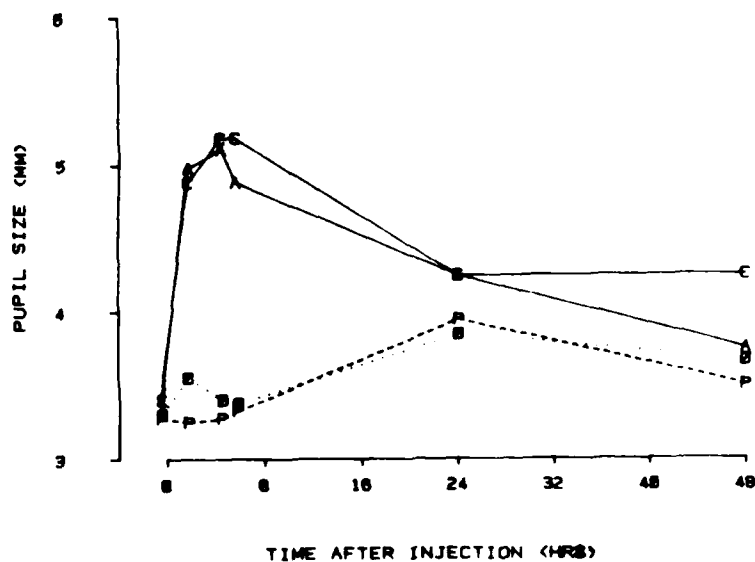


Figure 25. The time course of changes in pupil size produced by placebo, 1200 mg 2-PAM Cl, 4 mg atropine and combination dose (upper panel) and the same changes with placebo subtracted out (lower panel) (N=10).

In our pilot studies, we recorded pupil response using a dynamic infrared pupillometer in two subjects who had received the combination dose. For those two subjects, pupil size increased, pupil latency and speed of change remained unaffected, while the amplitude of response decreased significantly (from 2 mm response amplitude to 0.6 mm amplitude). These changes prompted us to evaluate pupil response during the main experiment. Pupil responsivity was estimated by the examiner ranking the amplitude of pupil response to a penlight using a scale from 0 to 5, 0 representing no response and 5 representing "normal" response. The time course of these rankings are shown in Figure 26 . Both the 4 mg dose of atropine and the combination dose produced significant loss of responsivity for up to 6 hours after injection with recovery of function 24 hours after injection. This loss of responsivity to light may be of practical significance, since an unresponsive pupil can dazzle and produce discomfort for someone walking outside into bright sunlight. 2-PAM Cl produced no change in pupil response.

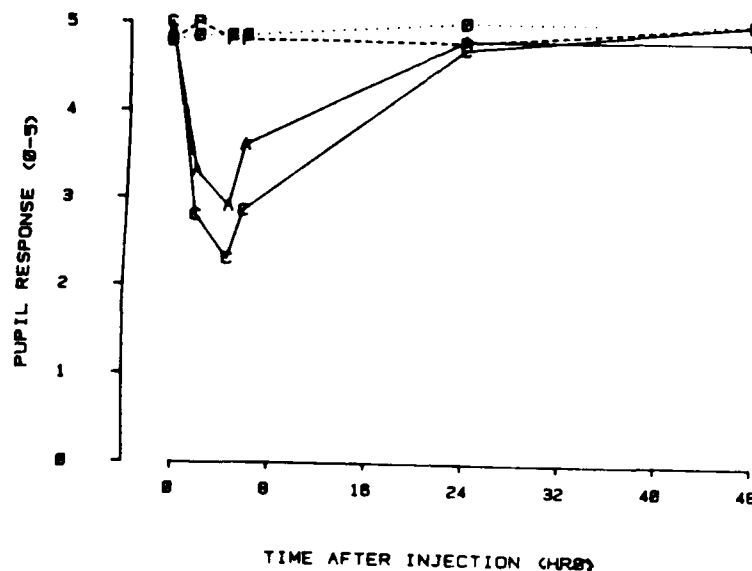


Figure 26. The time course of pupil response (examiner ranking) changes produced by injection of the four representative doses (N=10).

Color discrimination (desaturated D-15)

The desaturated D-15 color vision test was given before and after injection under appropriate lighting (Illuminant C provided by a Macbeth easel lamp). A color confusion index was calculated from the error scores (see annual report, Contract No. DAMD17-83-C-3198, 1984). Young adults with

normal color vision normally produce no errors on this test. No significant changes were found in this index after injection of any of the drug doses in this study, demonstrating that discrimination between pale desaturated colors is unaffected by atropine and 2-PAM Cl alone and in combination.

Stereopsis (Randot test)

The Randot test was given at a distance of 40 cm. This test presents random dot figures visible only using stereopsis as a cue. The disparities are presented through the use of polaroid filters. At this test distance, the smallest disparity is 20". The results are shown in Figure 27 for the four doses. Placebo and 1200 mg 2-PAM Cl cause absolutely no change in stereopsis. Atropine (4 mg) and the combination produce loss of stereopsis. The changes are not statistically significant for 4 mg atropine alone, but are significant for the combination dose 4.5 hours after injection. The loss of stereopsis was very pronounced in 3 subjects, who lost all ability to perform the test (<400 seconds of arc). The reason for the loss of stereopsis was blur, caused by their inability to accommodate sufficiently to resolve the detail in the disparity targets; no changes in ocular alignment occurred.

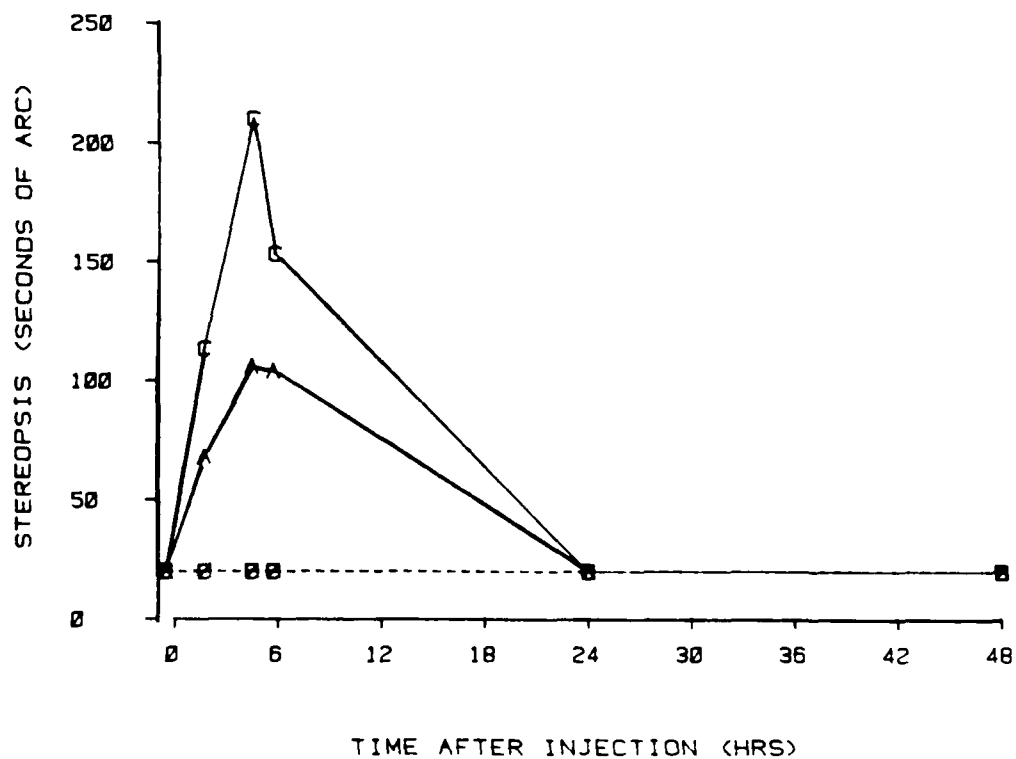


Figure 27. The time course of changes in stereopsis (Randot test) produced by injection of the four representative doses (N=10).

Specialized Tests:

Color matching steady-state (modified Nagel anomaloscope)

Color matching was performed on an instrument using the same principle as the Nagel anomaloscope. A yellow standard light is matched to to mixture of red and green lights. Instead of presenting the lights in a bipartitie

field like the Nagel anomaloscope, our device which uses LED's as sources presents two side-by-side circular fields. Five matches were made at each measurement time and the average and standard deviation was calculated. No significant changes were found for any dose or dose combination. In addition, no significant increases in variance were found for any drug dose, demonstrating that our subjects could be as careful and precise in their judgements after atropine alone and in combination as before.

Color matching (temporal):

The color matching described above was performed with steady continuous light - this match is thought to reflect only the underlying photopigments and is not affected by post-receptoral neural processing. We also used temporal form of color match which would be affected by alterations in post-receptoral neural processing. The color of a flashing red/green mixture is varied by adjustment of the temporal phase between the red and green pulse. The red/green contrast is fixed at 0.45; the luminance of the mixture was fixed at 10 cd/m². The subjects' task was to match this flashing mixture in color to the steady yellow standard. Normal subjects are capable of performing this task with standard deviations of between 2 and 4 ms. The results of this temporal color match are shown in Figure 28.

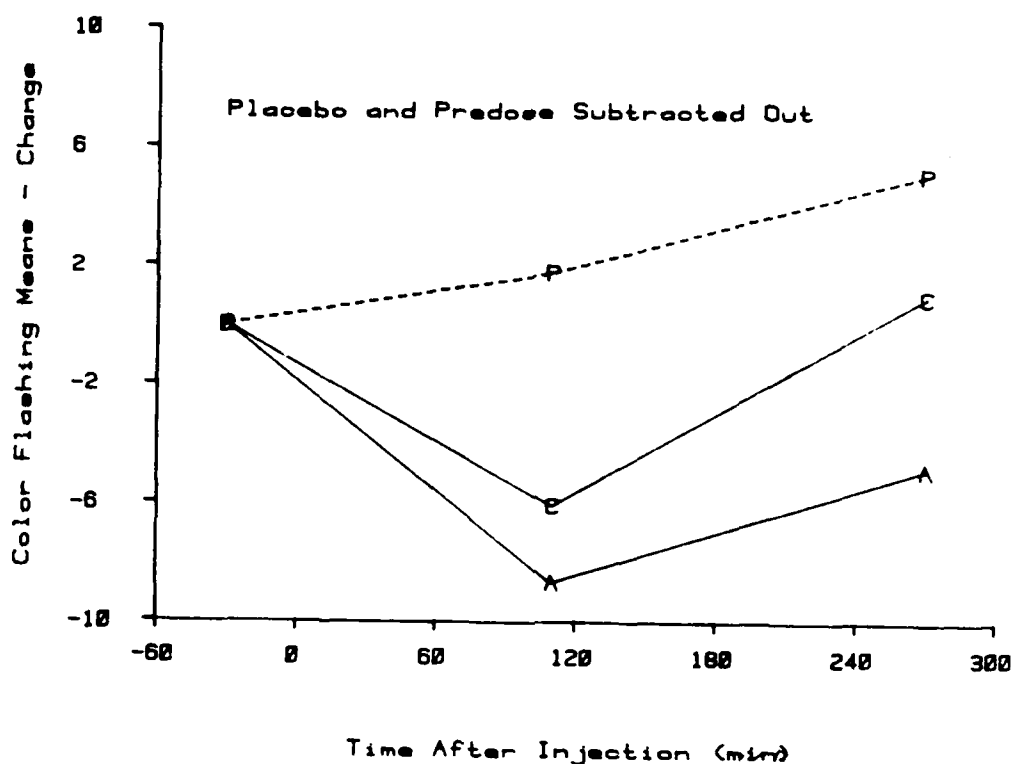


Figure 28. The time course of temporal color matching changes (units are in milliseconds) produced by the injection of the four representative doses with the values for placebo and predose subtracted out to show only the drug-induced changes (N=10).

The values for placebo and predose have been subtracted out to show only the drug-induced change. Negative numbers means that the subjects had to add more green to the mixture to make it match-positive numbers indicate that more red had to be added. The changes for 1200 mg 2-PAM Cl are not

significant but the changes for 4 mg atropine and the combination of 4 mg atropine and 1200 mg 2-PAM Cl are significant at the 110 post injection measurement time. The changes are small, of no practical significance, but they do indicate that these doses produce post-receptor alteration in the processing of color.

Increment Thresholds

Anti-cholinergic drugs such as atropine have been shown by others and by us to have effects on the iris sphincter and the ciliary body, demonstrating the existence of muscarinic cholinergic receptors in these tissues. In addition, many psychophysical studies have implicated acetylcholine as a possible neurotransmitter at some point in the visual system. For example, anticholinesterase drugs have been reported to affect flicker sensitivity and dark adaptation independent of pupillary changes (see Rengstorff and Royston, 1976 for review). Our result on changes in temporal color matches caused by atropine suggest that acetylcholine is a transmitter in the retina.

Cholinergic receptors are known to exist in the retina of several mammals (Neal, 1976; Daw et al. 1982). Recently, autoradiographic studies of donor human eyes have demonstrated the existence of muscarinic cholinergic receptors in the inner and outer plexiform layers of the human retina (Zarbin et al., 1984; Hutchins and Hollyfield, 1985).

To evaluate the possible functional role of acetylcholine, we measured color sensitivity for each of the three cone pathways using the two-color increment threshold technique. These thresholds are thought to be primarily retinal in origin and have been shown to be abnormal in the earliest stages of several retinal diseases (such as diabetic retinopathy, central serous retinopathy and age-related retinopathy; Adams et al. 1981; Adams, 1982;

Haegerstrom-Portnoy and Brown, 1985). In addition, we determined sensitivity to 25 Hz flicker measured on a bright white background, a condition designed to "isolate" non-chromatic pathways.

The stimulus was a 1.5 degree centrally fixated target presented on a 10 degree adapting field; the stimulus was presented for 200 ms for the increment threshold measurements and continuously for the flicker measures. We constructed a small portable Maxwellian view two channel optical system, the image of the filament of the light source in the pupil plane was 0.5x1.0 mm, ensuring that changes in pupil size caused by atropine did not affect the measurements. In addition, the stimuli were presented at optical infinity requiring no accommodation on the part of the subjects. The optical system is shown in Figure 29. A micro-computer controlled the intensity of the test stimulus through a Kodak Inconel circular neutral density wedge mounted on a stepper motor. Another stepper motor with a vane mounted on it acted as shutter.

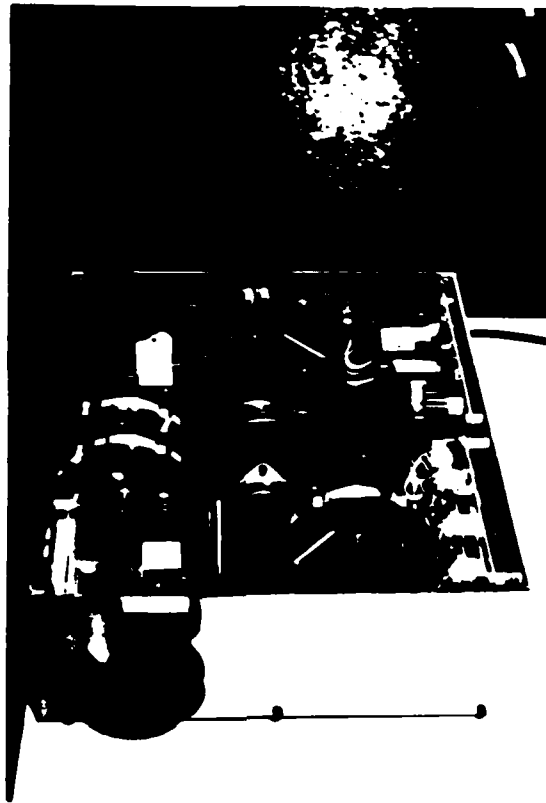


Figure 29. Maxwellian view computer controlled optical system used for the increment threshold experiments.

The B cone pathways were "isolated" by presenting 440 nm and 480 nm stimuli on a 3.85 log troland yellow background (Wratten No. 15). The G cone mechanism was measured using a 570 nm test target on a 3.70 log troland magenta background (Wratten No. 34) and the R cone mechanism was "isolated" using a 570 nm target on a 3.0 log troland blue background (Wratten 47B). Preliminary experiments showed that these stimulus conditions produced adequate isolation at the wavelengths used. Two points on a luminosity function were determined by measuring sensitivity to 25 Hz flicker for 480 and 570 nm targets presented on a 3 log troland white

background, derived from a tungsten-halogen ophthalmoscope bulb.

Thresholds were measured using a two-alternative temporal forced choice staircase paradigm. The target was presented randomly in one of two intervals and the subject had to respond by pushing buttons corresponding to the first or the second interval. The stimulus luminance was reduced after two consecutive correct responses and increased after one incorrect response. The average of 5 reversals at a stepsize of 0.085 log units was calculated as the threshold. This method of forced choice minimizes the effect on changing response criterion possibly caused by the drugs.

Short wavelength sensitive pathways - B cone pathways

440 nm on yellow/480 nm on yellow

The results for the B cone pathways are shown in Figure 30. The results for placebo have been subtracted out to demonstrate the drug effects more clearly. The top half of the figure shows results for 440 nm and the bottom half shows the results for 480 nm - they are, as expected very similar. Both wavelengths measure B cone function - we included both to verify that B cones detected the test target. In all cases, B cones were demonstrated to detect the target. Atropine (4 mg/70 kg) alone and in combination with 1200 mg 2-PAM Cl produce a small but significant loss of B cone pathway sensitivity at the 110 minute post injection period. The loss evident at 270 minutes post injection is also statistically significant, even though some evidence for recovery of function is clear from Figure 30. The average amount of loss at 110 minutes is about 0.35 log units for the two wavelengths - a factor of a little more than 2. This change is not likely to have any practical consequence but it does show that atropine produces acute measureable changes in the post-receptor neural function of the visual system-probably the retina. 2-PAM Cl causes no change.

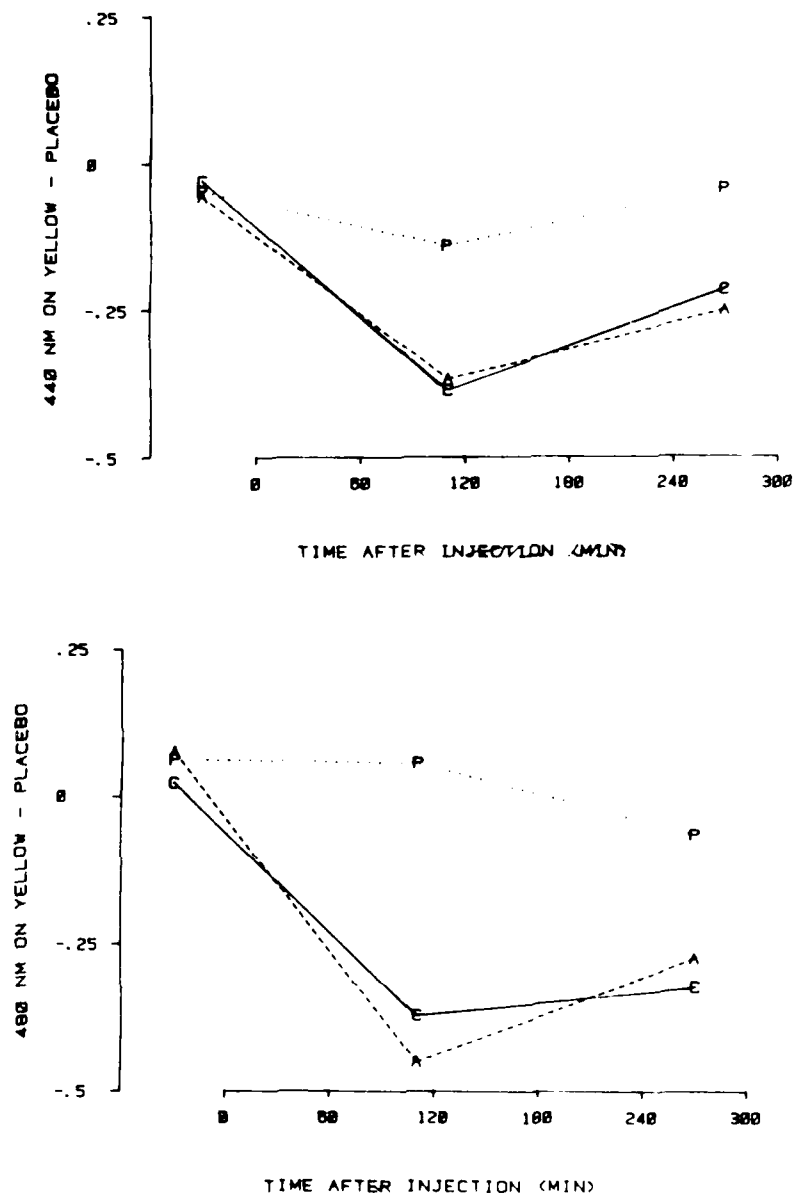


Figure 30. Time course of sensitivity of B cone pathways measured using two different wavelengths: 440 nm (top) and 480 nm (bottom).

Middle-wavelength sensitive pathways-G cone pathways

570 nm on magenta

Figure 31 shows similar results for the G cone pathways - again a small but statistically significant loss at 110 minute post injection and a

faster recovery of function such that the measurements at 270 nm are no longer significantly different from zero. The amount of change at 110 minutes post injection is of about the same order of magnitude (a factor of 2) as the changes found for the B cone system. This results shows that the changes are not specific to the B cone system, which is known to be more vulnerable to disease of the retina. Instead, the atropine induced change may reflect a more general loss of responsivity in post-receporal chromatic channels.

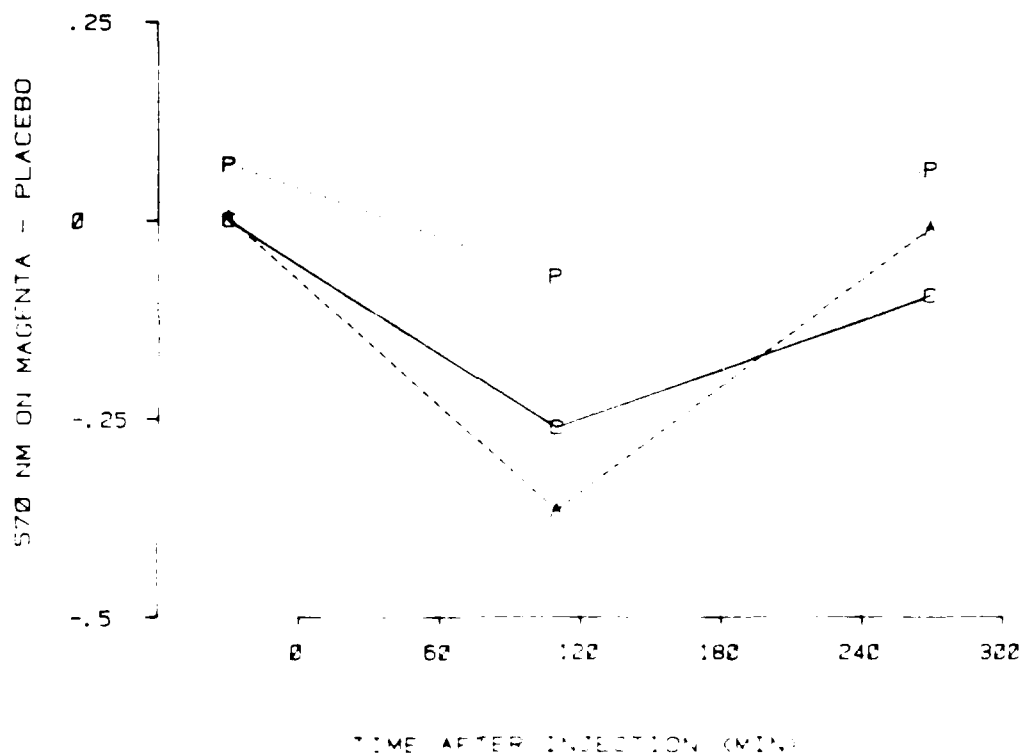


Figure 31. Time course of sensitivity of the G cone pathways.

Long-wavelength sensitive pathways-R cone pathways

570 nm on blue

The results for the R cone system shown in Figure 32 does not bear out the view that all pathways are affected equally by the drug. None of the changes shown in Figure 32 reach statistical significance. What this finding means is not clear.

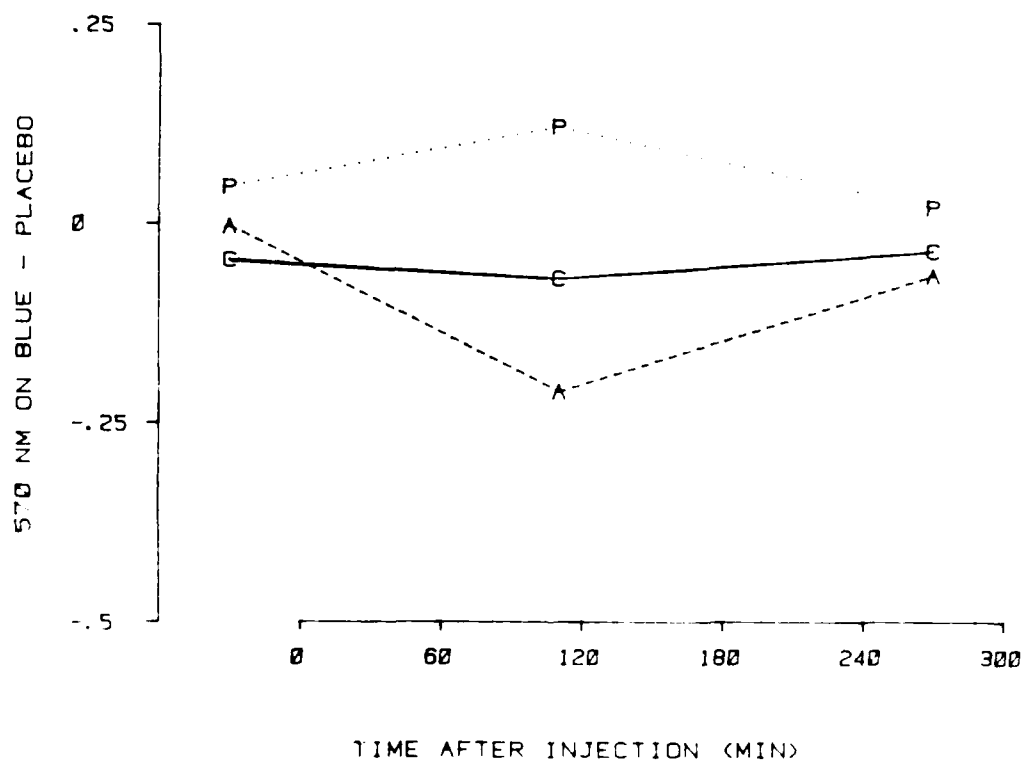


Figure 32. Time course of sensitivity of R cone pathways.

Achromatic channels-luminosity function

480 nm/570 nm 25 Hz flicker detection on white backgrounds

The results for sensitivity to 25 Hz flicker are shown in Figure 33 for two wavelengths-570 nm and 480 nm. The data are very close to a straight line-no significant change in this measure, which was chosen because it is a measure of achromatic sensitivity. The spectral sensitivity fo 25 Hz flicker on bright white backgrounds resembles very closely the photopic luminsoity function - the V () function.

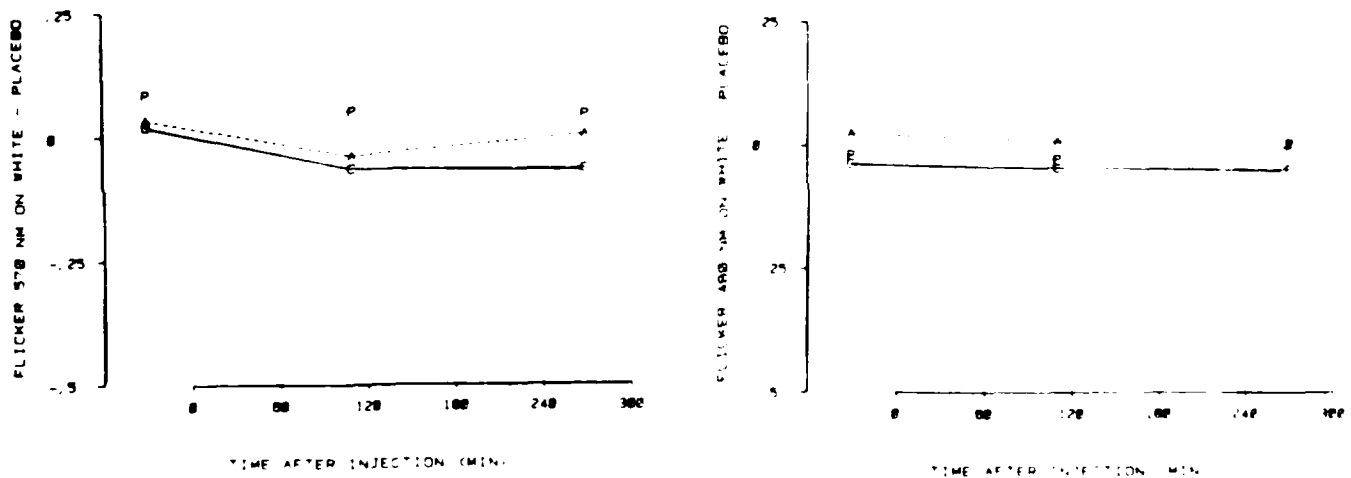


Figure 33. Time course of "achromatic" sensitivity; 25 Hz flicker measured for two different wavelengths 570 nm (top) and 480 nm (bottom).

The results demonstrate that atropine alone and in combination with 2-PAM Cl produces acute dose-related losses of sensitivity for chromatic stimuli designed to "isolate" each of the cone pathways in the human retina. In contrast, no significant changes were found in the sensitivity to 25 Hz flicker presented on a bright white background, a condition designed to "isolate" non-chromatic pathways. As mentioned above, the losses cannot be explained by drug induced alteration in pupil size, accommodative ability or response criterion.

The threshold measures used are generally thought to be retinal in origin and are easily disrupted by retinal disease. These losses in two-color sensitivity are consistent with recent autoradiographic evidence that acetylcholine is a neural transmitter in the human retina.

COMBINATION STUDY RESULTS IV

Subjective mood questionnaire, tests of memory and cognitive function

Subjective checklist

Several times each day, we asked our subjects to rate their subjective impressions of the drugs by filling in a checklist (see Appendix 3). No significant changes in ratings for any attribute on the checklist were produced by 1200 mg 2-PAM Cl alone or placebo. As expected, atropine and the combination dose produced significant increases in the ratings for mouth and skin dryness, distance and near vision as well as high rating. These subjective ratings remained significantly different from placebo at all three testing sessions on the day of injection (105, 270 and 345 min post injection) but returned to normal the following day. Balance and coordination were affected up to 270 min post injection for atropine alone and up to 345 min post injection for the combination. All subjects reported fatigue after the 4 mg atropine dose and in addition significantly reduced concentration after the combination dose up to 270 minutes after injection. The combination dose also caused the subjects to report feelings of restlessness at 105 minutes after injection even though atropine alone or 2-PAM Cl alone produced no change in these ratings. The other attributes of temperature, tension, depression, anxiety, confusion and forgetfulness were unaltered.

Stroop color/word form test

The Stroop test measures the ability to inhibit an overlearned response. The overlearned response in this case is reading and the test

measures how reading interferes with color naming. The test is sensitive to diffuse brain dysfunction and frontal lobe dysfunction. We used a standardized version of the Stroop test which consists of three pages, each page having 5 columns of 20 items. The first page consists of the words "GREEN", "RED" and "BLUE" arranged randomly and printed in black ink. The subject's task is to read correctly as many words as possible in a period of 45 seconds. If errors are made, the subject has to repeat the incorrectly read word. The score is simply the number of words read correctly. The second page consists of the same arrangement of columns but instead of words, each item is "XXXX", printed in either red, green or blue ink. The subject's task is to name the color of each item correctly and to continue for 45 seconds. The score is the total number of items correctly identified. The third page consists of the words from the first page printed with colored ink as on the second page. In no case does the word and the color that it is printed in match. The subject's task is to name the color of the ink the words are printed on. For example, the first item is the word "RED" printed in blue ink. A correct response would be blue; an incorrect response would be red. As before, the total number of items correctly read in 45 seconds represents the score. The scores are corrected for age differences and a measure of interference is calculated based on the predicted interaction between the words and the colors from the results of pages 1 and 2 and the actual interaction found from the results of page 3. These calculations were performed for all the drug doses with the result that no significant differences were found for any drug or drug combination. Atropine alone or in combination with 2-PAM Cl did not produce any more or any less "interference" than placebo at any of the testing times after injection (45 min, 170 min, 24 hrs, 48 hrs).

Five item acquisition and recall

This test is part of the RANDT memory battery. The test was given 180 minutes after injection as well as 24 and 48 hours after injection. A list of 5 words was read aloud to the subject, subject was asked to recall the five words. Each subject was given 3 chances to correctly repeat all five words, to make sure that they had been remembered. The total score for "immediate" recall is simply the total number of words correctly remembered on the three trials or a maximum of 15. After the digit span test had been administered, the subject was again asked to recall the five words (about 5 minutes) after the initial presentation. At the 5 minute, 24 hour and 48 hour measurement times, each subject was only given one chance to remember the words and his score is just the number of words correctly identified. Five alternate sets of five items were used during the experiment. No significant differences were found in the ability to acquire or recall the five items after administration of any dose of either atropine or 2-PAM Cl or drug combination. The results are shown for all drug doses in Figure 34.

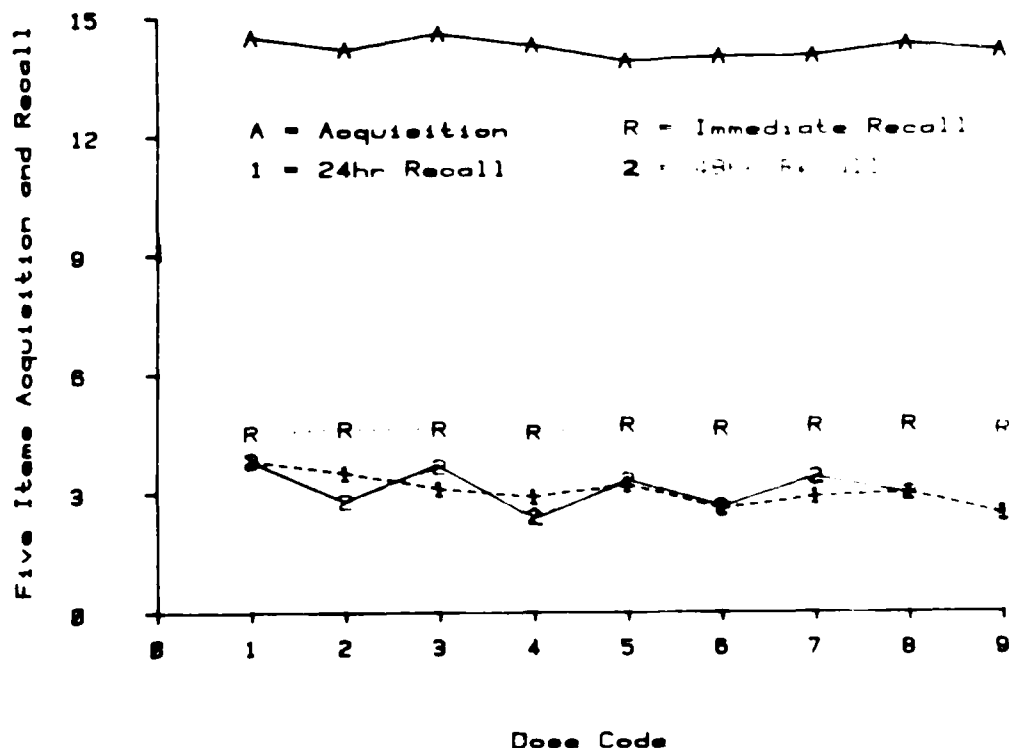


Figure 34. Results for five item acquisition and recall. Dose codes: 1) Placebo, 2) 600 mg 2-PAM chloride, 3) 1200 mg 2-PAM chloride, 4) 2 mg atropine, 5) 4 mg atropine, 6) 600 mg 2-PAM chloride and 2 mg atropine, 7) 600 mg 2-PAM chloride and 4 mg atropine, 8) 1200 mg 2-PAM chloride and 2 mg atropine, and 9) 1200 mg 2-PAM chloride and 4 mg atropine.

Forward and backward digit span

The subjects' abilities to correctly repeat numbers forwards and backwards were tested 180 minutes after drug injection. This test is also

part of the RANDT memory battery and is a measure of attention span. The subjects had to repeat digit sets initially 3 long and increasing by one-- testing was continued until an error was made. The maximum length of digits correctly repeated represents the score. The subject first repeated the digit sets forward and then backward. Five alternate sets of number sequences were used during the experiment. The results are shown for all drug doses in figure 35. No differences in performance on this task was found for any drug or drug combination. It is possible that some effects may have been found if testing had been done earlier, but it was not practical to do so, since the subjects were busy tracking or having their vision functions evaluated.

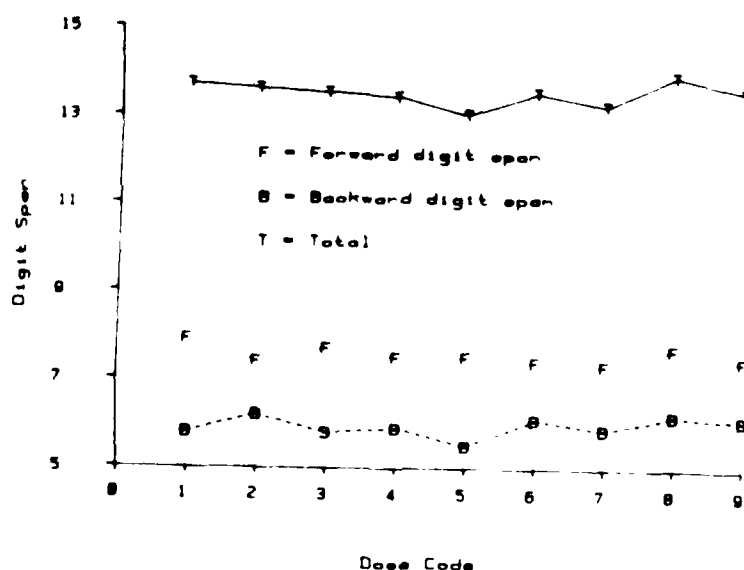


Figure 35. Digit span (forward, backward and total) evaluated 180 min post injection (N=10). Dose codes: 1) placebo 2) 600 mg 2-PAM Cl 3) 1200 mg 2-PAM Cl 4) 2 mg atropine 5) 4 mg atropine 6) 600 mg 2-PAM Cl and 2 mg atropine 7) 600 mg 2-PAM Cl and 4 mg atropine 8) 1200 mg 2-PAM Cl and 2 mg atropine 9) 1200 mg 2-PAM Cl and 4 mg atropine

Short story acquisition and recall

This memory test, part of the RANDT memory battery was given using the same general procedure used for the five item acquisition and recall. About 3 hours after injection, each subject listened to a short story consisting of 20 details. Immediately after hearing the story, the subject had to repeat as much as he could remember in his own words. He was then distracted by doing backwards subtraction by seven and again asked to recall the story five minutes later, as well as 24 and 48 hours later. The score at each testing time is simply the total number of details correctly remembered. Five alternate versions of the test were given during the experiment. Again, no significant difference in performance was found for any drug or drug combination.

Controlled oral word association

Every drug day, about 3 hours after injection, each subject was given two letters and asked to name as many words as he could starting with each of those two letters within a 60 second time period. This test measures the subjects ability to call on and use semantic memory. Five alternate groups of letters were presented during the experiment. No drug effects were found on this task either.

PASAT

The Paced Auditory Serial Addition Test (PASAT) is a test of auditory vigilance not associated with intelligence or mathematical ability. The test is sensitive to concentration problems such as those produced by sedative drugs. This test was administered once every drug day, about 180 minutes after injection. The subjects listened to a tape recording of numbers read sequentially with a specific inter-number time interval. The subject's task was to add the last two numbers. For example, when presented with 6 and 4 the subject was supposed to say 10; then if the number 5 was presented, the correct answer would be 9 (4 and 5 being the last two numbers). A series of 60 numbers was initially presented at a rate of one every 2.4 seconds and the correct number of additions was recorded. The speed of presentation was then increased for the next series of 60 numbers to one number every 2 seconds, then one every 1.6 seconds, and finally one every 1.2 seconds. The total scores were converted to time in seconds per correct response. The results for each of the four speeds of presentation (A,B,C,D) are shown in Figure xx for all the different doses. The standard control time scores for normals between the ages of 14 and 40 are 3.2 (+0.25) for first test and 2.6 (+.25) for retests. No significant difference in performance was found after administration of any drug or drug combination, in spite of the fact that the subjects were still visibly affected by the drugs and showed signs of fatigue. It is possible that some effect may have been found if we had been able to test earlier.

These results indicate that atropine in doses up to 4 mg/70 kg body weight alone and in combination with 2-PAM Cl up to 1200 mg has no

significant effect on memory and cognitive function at 3 hours after injection. The subjects were able to muster enough resources to perform the tasks, at least for the relatively short periods of time required to go through the test battery described above. Practice and order effects may have contributed significantly to the lack of drug effects, since each test was given many more times than the tests were designed for.

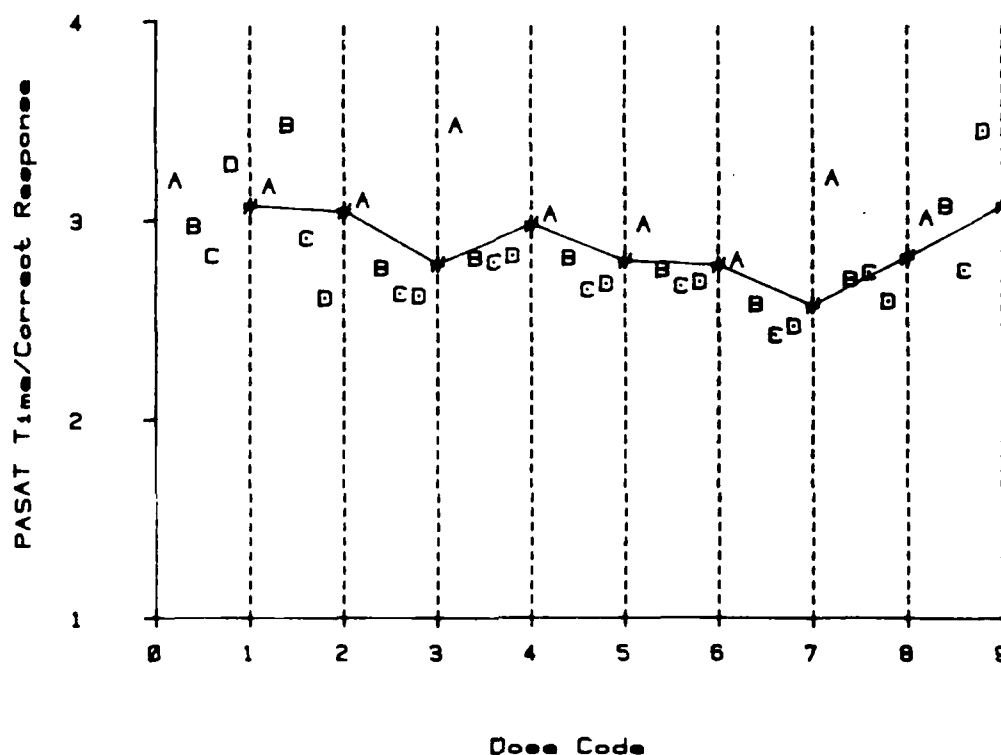


Figure 36. PASAT time/correct response. The # sign represents the mean for each dose. A=one number every 2.4 s; B=1/2.0 s; C=1/1.6 s; D=1/1.2. Dose codes: 1) Placebo, 2) 600 mg 2-PAM chloride, 3) 1200 mg 2-PAM chloride, 4) 2 mg atropine, 5) 4 mg atropine, 6) 600 mg 2-PAM chloride and 2 mg atropine, 7) 600 mg 2-PAM chloride and 4 mg atropine, 8) 1200 mg 2-PAM chloride and 2 mg atropine, and 9) 1200 mg 2-PAM and 4 mg atropine.

DISCUSSION

The purpose of this contract was to study in young human volunteers the effects of atropine and 2-PAM chloride alone and in combination on a series of visual functions, cardiovascular functions, memory and cognitive functions as well as complex hand eye tracking performance. The plan was not only to delineate what the effects are but to produce a complete time course of the effects including the recovery of function. Our studies have addressed the following question:

1. What are the effects of atropine alone in doses up to 4 mg/70 kg body weight?

The results of the experiment involving 10 volunteers given intramuscular injection of atropine in doses up to 4 mg can be summarized as follows. Atropine in the 2 mg dose has no effect on BLASER tracking, while the 4 mg dose produces a significant loss of performance at the measurement session that began 2.5 hours after injection. No recovery was evident in this experiment. Atropine also produced dose-related, long-lasting changes in peripheral visual function such as accommodative ability and pupil size. These functions recovered within 24-48 hours. No changes were seen in distance visual functions. The 4 mg dose of atropine produced no further changes than the 2 mg dose on the cardiovascular functions measured, for example pulse rate. The most noticeable side-effect of atropine in the higher dose was fatigue.

2. What are the effects of 2-PAM Cl alone in doses up to 1200 mg/70 kg

body weight?

The results from the experiment involving 8 volunteers given intramuscular injections of 2-PAM Cl in doses up to 1200 mg /70 kg can best be summarized by saying that there were NO effects on either visual functions or on BLASER tracking. There was a small, practically insignificant, increase in blood pressure, but no changes in pulse rate. The only major effect of 2-PAM Cl was severe pain on injection.

3. What are the effects when atropine in doses up to 4 mg is injected at the same time (but not in the same leg) as 2-PAM Cl in doses up to 1200 mg?

The following general comments can be made regarding the combination experiment which involved 10 volunteers given 9 different doses of atropine (up to 4 mg) and 2-PAM Cl (up to 1200 mg) and all possible combinations of the single doses.

a. The majority of the effects of the high dose combination (4 mg atropine, 1200 mg 2-PAM Cl) can be predicted on the basis of the atropine results alone. The same is true of the other lower doses as well.

b. Atropine (4 mg) and dose combinations involving 4 mg of atropine produce significant losses of tracking performance with signs of recovery occurring about 4 hours after intramuscular injection.

c. A small but significant and completely unexpected potentiation exists between 2-PAM chloride and atropine on some cardiovascular functions and some peripheral visual functions. This potentiation occurs only for the high dose combination of 4 mg atropine and 1200 mg 2-PAM Cl. The onset of

drug effects are earlier, the peak loss of function is greater and the time of recovery is delayed when the results for atropine alone (4mg) are compared to atropine (4 mg) and 2-PAM Cl (1200 mg) given at the same time. Pupil response, accommodation, and diastolic blood pressure are the measures affected. No synergism or potentiation was found for the tracking performance on the BLASER system.

Specifically, the following is a brief discussion of the results of the combination experiment.

1. Tracking performance

The effect of the combination dose on tracking performance was no different than the effects produced by atropine alone. 2 mg of atropine did not produce any statistically significant changes, confirming our previous results, while the 4 mg dose alone or in combination with 600 or 1200 mg of 2-PAM produces a significant loss of tracking efficiency, amounting to approximately 70% change in the accuracy with which the subjects were able to keep the target on the moving tank. The tracking task used with the combination study was considerably more difficult than the task used for the experiment that involved atropine alone. In the combined experiment, the tracking task had a vertical component which means that the absolute errors made by the subjects in the combination study are considerably larger (a factor of two) than those made in the experiment involving atropine alone where the tracking task was horizontal and completely predictable. Nevertheless, when the data are converted to percent change, we are able to delineate the course of effects of atropine on tracking. The results are as follows:

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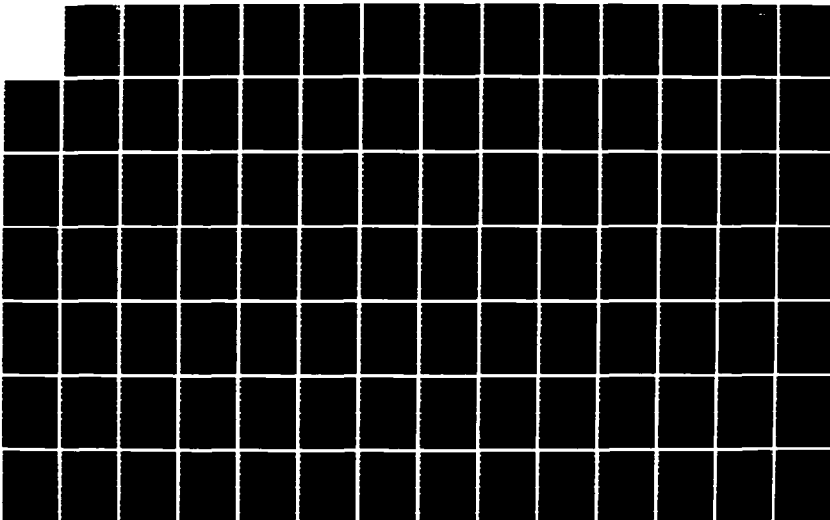
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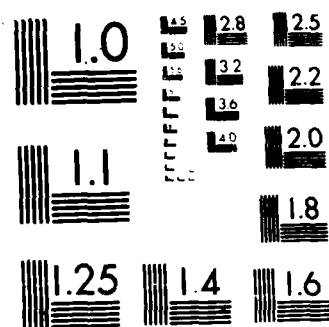
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MICROCOPY RESOLUTION TEST CHART
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short-lived loss of tracking efficiency, only about 3 hours after injection, with some recovery occurring thereafter, indicating that men are able to perform this task even after the high dose combination of atropine and 2-PAM chloride. The errors are such that even though the subjects were tracking off the center of the target, they were nevertheless on the tank. The percent time on target for example, after the high doses of atropine, dropped in the dark from about 50 % on the target to about 30 % on the target.

2. Visual functions

The demonstrated losses of visual function such as loss of ability to accommodate and increased pupil size are not likely to be of any practical significance for distance vision. There may, however, be practical problems with near tasks such as reading maps or looking at instrumentation at close distances. Some of our subjects, particularly for the high dose combination of atropine and 2-PAM chloride, lost essentially all accommodative ability and were unable to see anything within arm's length. A substantial amount of individual variability in this response was clear from the results, with 4 of the 10 subjects unable to see any closer than 1 m after the combination high dose, while 4 others were able to see up to 25 cm. The changes in pupil size are of no practical significance, while the loss of pupil response may result in glare effects when going outside. We did not investigate this effect since all of our experimentation was done indoors. The changes in the other vision functions such as acuity can be predicted on the basis of the changes in accommodation and pupil size. Some of our subjects lost all stereoscopic acuity after the high dose combination, but this loss was caused by the fact that they could not

accommodate at all and were unable to resolve the stereoscopic test targets.

The demonstrated losses of increment sensitivity for blue and green cone function, however interesting, are not likely to be of practical significance since the effects are quite small. The threshold only increases by a factor of 2. The results do demonstrate that atropine can have effects on the retina. Whether retinal adaptation (kinetic) mechanisms are affected by the drug combination remains to be tested. This is an important question, particularly in light of the fact that pupil response essentially disappears after the high dose combination, allowing considerably more light to enter the eye.

3. Memory/Cognitive functions

Because we were measuring so many different functions, we were unable to determine a complete time course of memory and cognitive function. Most of the memory functions were measured 3 hours after injection when there was a time period where no other functions were being measured. Surprisingly, none of the various memory functions showed any significant change. Even measures such as the PASAT, which is known to be affected by sedative drugs showed any effect of the atropine alone or in combination with 2-PAM chloride, indicating that even though the subjects were visibly tired and fatigued, they could pull themselves together and perform the task. Whether soldiers would be able to pull themselves together for longer periods of time than the 5 or 10 minutes required for our tests cannot be predicted from the present results.

4. Cardiovascular function

Pulse rate increases produced by atropine alone and in combination with 2-PAM in the higher doses is likely to be of no practical consequence. The increases in blood pressure, however, may cause problems in individuals whose blood pressure is already elevated. The diastolic blood pressure on some of our subjects increased by 40 mm, to over 120 mm Hg, a level which is of no concern for a short period of time in a young, healthy male but which may be of concern in individuals whose cardiovascular systems are already stressed from disease. These very large increases in diastolic blood pressure occurred mainly after injection of 4 mg atropine in combination with 1200 mg 2-PAM Cl. The synergism seen between 2-PAM Cl and atropine for the highest doses may be caused by a sympathomimetic effect by 2-PAM Cl.

Time course of atropine effects

Part of our aim was to delineate the time course of effects of atropine and 2-PAM Cl. Since the majority of effects were produced by the atropine, the following discussion refers only to the 4 mg dose of atropine. The peak effect and recovery occur at different times for different functions. For example, cardiovascular functions such as pulse rate show signs of effect within 15 min of injection and a peak of about 60% change at 45 min. after injection. There are signs of recovery at 1 hour after injection and there is complete recovery of predose function between 3 and 4 hours after injection. The effects for the cardiovascular functions are thus fairly short-lived. The peripheral visual functions

such as pupil size and accommodation have a much longer time course. The onset occurs around 1 hour after injection with a peak loss of between 60 and 70% change, occurring between 5 and 6 hours after injection. The onset of recovery is not known, possibly some time during the night. Full recovery of predose function occurs between 24 and 48 hours after injection. The tracking performance on the BLASER task has a time course intermediate between the very rapid cardiovascular effects and the very long lasting peripheral visual effects. The onset of tracking performance loss is around 1 hour. The peak change amounting to about 70% change in performance efficiency, occurs around 3 hours after injection, with signs of recovery 4 hours after injection. The time of complete recovery is not known. These time courses and effects are demonstrated in Fig. 37, which shows the complete time course of the various functions derived by combining the results for the two studies that involved atropine. The graph shows percent change in functions for selected measures after intramuscular injection of atropine 4 mg/70 kg body weight.

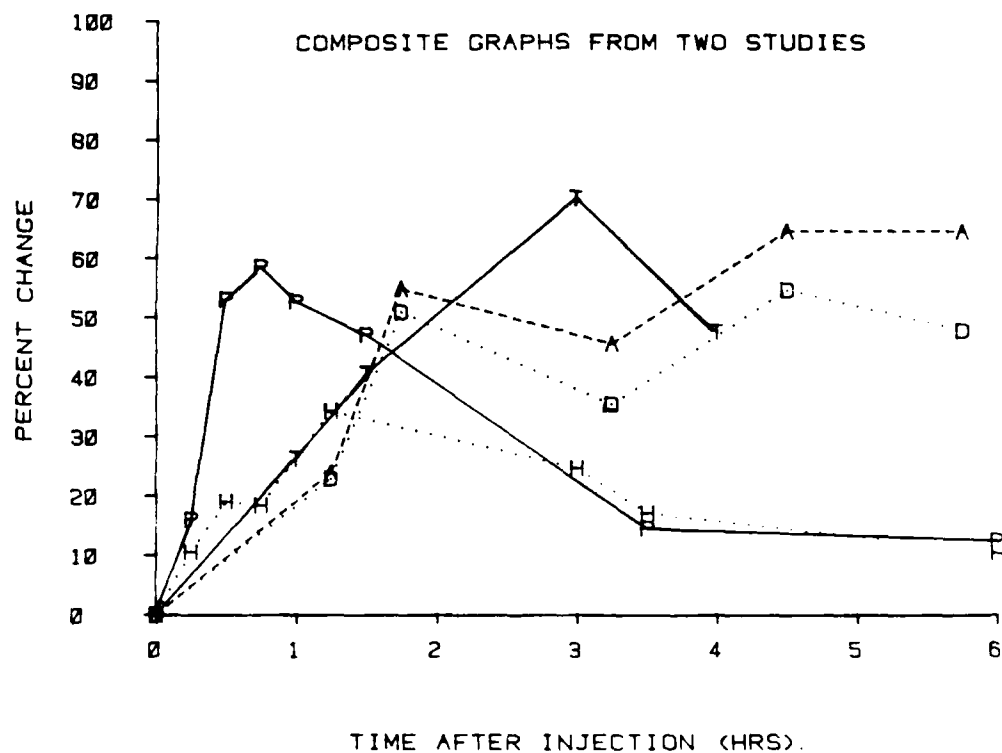


Figure 37. Percent change in selected functions. The graph combines data from both experiments involving atropine. P = pulse rate; T = tracking performance in the dark ambient condition; A = accommodation; D = pupil diameter and H = subjective high rating.

Our subjective impression of the performance of our young male volunteers under the influence of atropine in combination with 2-PAM is one of surprise at how well they performed considering their appearance. They were visibly affected by the drugs, appeared tired, off balance and confused. Nevertheless, our objective measures indicate that men are capable of performing even after the high dose combination of atropine and 2-PAM Cl, but their performance efficiency decreases. We hope that the data tables containing all the individual data for all drug doses and functions attached to this report will serve as a useful data base to other investigators interested in the effects of anticholinergic drugs on human performance.

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Cardiovascular Screen

Health History Questionnaire

In order to provide you with more effective medical care, your doctor needs certain basic information about your medical history. The few minutes you spend completing this booklet, will be an important contribution to your overall health care.

Begin by opening this page out flat on a hard surface. Please, do not fold it back on itself. Read all instructions carefully before answering any questions. When you do answer, PRINT firmly using a ball-point pen.

Please take whatever time you need to finish each section. Don't worry if you can't remember, or aren't sure of the answer to any part or question. You'll have a chance to go over it afterwards with the doctor.

Thank you

IDENTIFICATION DATA Please print the following information.

Name _____ Today's date ____/____/____ File no. ____
Address _____ Male _____ Female _____ Race _____ Date of Birth ____/____/____
Telephone _____ Zip Code _____ Married _____ Separated _____ Divorced _____ Widowed _____ Single _____
Home number _____ Work number _____ Education _____ years Elementary _____ years High School _____
Social Security or Medicare No. _____ Occupation _____ years College, Technical, Business, etc. _____

SPECIAL PROBLEMS OR SYMPTOMS

1. In the blank lines below, please describe any special problems or symptoms you would like to discuss with the doctor today

2. How long have you had this problem? _____ for 1 week _____ for 1 month _____ for 1 year _____ over 1 year

3. Have you ever seen a doctor for this problem in the past? _____ Yes _____ No

IF YES: a. How did the doctor diagnose your problem? _____

b. How did the doctor treat your problem? _____

c. Did the treatment help you? _____ Yes _____ No

GENERAL SCREEN

1. Please place an (X) next to any of the following problems that you have right now

_____ frequent headaches	_____ trouble with stomach or digestion	_____ trouble with bruises
_____ trouble with eyes or vision	_____ vomiting	_____ aching muscles or joints
_____ trouble with ears or hearing	_____ trouble with bowels	_____ numbness in fingers
_____ trouble with nose	_____ constipation	_____ crying spells
_____ congested nose or nose bleeds	_____ loose bowels	_____ work or family problems
_____ trouble smelling	_____ blood in stools	_____ sexual difficulties
_____ coughing spells	_____ trouble with urination	_____ fever
_____ coughing up a lot of phlegm	_____ difficulty starting urine	_____ weight changes
_____ trouble breathing (shortness of breath)	_____ trouble with genitals	_____ fatigue
_____ dizzy spells	_____ trouble with periods	

2. Have you ever considered committing suicide? _____ Yes _____ No

3. Have you ever used marijuana or heroin, LSD, or similar drugs? _____ Yes _____ No

4. Are you allergic to any medications, foods or other substances? _____ Yes _____ No

IF YES, what? _____

5. List all medications you are currently taking _____

6. When is the last time you had a physical examination? _____ Year

7. Have you ever been told you had any chronic or serious illness? _____ Yes _____ No

IF YES, please list the illnesses you have now or have had _____

8. Give the following information for the last three times you have been hospitalized starting with the most recent. (Do not list normal pregnancies.)

	HOSPITALIZATION (1)	HOSPITALIZATION (2)	HOSPITALIZATION (3)
Type of operation or illness			
Month and year hospitalized			
Name of hospital			
City and State			

9. Please list the following information for your blood relatives

	<u>Year of Birth</u>	<u>Major Illnesses</u>	<u>Age</u>	<u>Cause</u>
Father	_____	_____	_____	_____
Mother	_____	_____	_____	_____
Brothers	_____	_____	_____	_____
or	_____	_____	_____	_____
Sisters	_____	_____	_____	_____

Your Signature _____

CONTINUE TO NEXT PAGE

(Do not write below this line. For doctor's notes.)

Please answer each of the following questions by placing an (X) in the blank at the right that most applies to you. If you are unable to answer a question for any reason, place a small circle (●) in the first blank.

1. Are you troubled with dizzy spells or lightheadedness?
IF YES: How often do they occur?
2. Do you have hot flashes or soaking sweats?
IF YES: How often do you have them?
3. Do you have veins that ache or swell?
IF YES: How often does this happen?
4. Have you ever had trouble with blood vessels in your arms or legs?
5. Have you ever had varicose veins in your legs?
6. Have you ever had phlebitis (inflammation of the vein)?
7. Has anyone ever told you that you had any of the following illnesses?
 - a. trouble with your heart
 - b. heart murmur
 - c. angina
 - d. heart attack
 - e. coronary artery disease
 - f. myocardial infarction
 - g. coronary occlusion
 - h. arteriosclerosis
 - i. heart disease
 - j. enlarged heart
 - k. rheumatic heart
 - l. leaky heart
 - m. blocked heart
 - n. hole in your heart
 - o. inflamed heart
 - p. blood clot
 - q. heart failure
 - r. aneurysm
8. Are you concerned that you may have heart trouble?
9. Have you been told that your blood pressure was too high?
10. Have you been told that your blood pressure was too low?
11. Have you been told that you have high cholesterol (fat in the blood)?
12. Have you ever had an electrocardiogram (EKG)?
13. Have you ever had an abnormal electrocardiogram?
14. Have you taken any medicines for your heart in the past year?
15. Have you taken any of the following medicines:
(IF YES, write in the year you last took them.)
 - a. anticoagulants (blood thinning pills)
 - b. medicine for high blood pressure
 - c. fluid water pills
 - d. nitroglycerine (under tongue)
 - e. digitalis
 - f. quinidine
16. In the blank spaces at the right, list any other medicines you have taken for your heart and give the year you last took them:
17. Do you smoke any of the following?
 - a. cigarettes
 - b. pipe
 - c. cigars
18. If you smoke cigarettes, do you smoke:
 - a. less than 10 a day
 - b. between 10 and 20 a day
 - c. between 20 and 40 a day
 - d. over 2 packs a day
19. If you smoke cigarettes, how long have you been smoking at your present rate?
 - a. for about a month
 - b. for about a year
 - c. for several years
20. If you do not smoke now, did you ever smoke?

Turn To The Next Page

Page 3

11. Do you often wake up suddenly feeling
like you are smothering?

IF YES: a. How long has this been happening?
b. How often has this been happening?
c. How severe is this smothering feeling?
d. Does this smothering feeling continue when you sit up?
e. Does this smothering feeling get worse if you lie flat?
f. Do you always sleep with two or more
pillows under your shoulders?
g. Do you get tired more easily than other people?

12. Have you had any unusual heart beats such
as palpitations, skipped beats, etc.?

IF YES: a. How long has this been happening?
b. How frequently do your unusual heart beats occur?

c. How long do your unusual heart beats last?

d. Do you have unusual heart beats
with any of the following:

e. Are your unusual heart beats relieved
by any of the following:

23. Have you had pains or cramps in your legs while walking?

IF YES: a. How long has this been happening?
b. How often do you get these pains?
c. How severe are these pains?
d. Do these pains make you stop walking?
e. Do these pains go away if you rest for a few minutes?

24. Have you had pains or cramps in your legs while sleeping?

IF YES: a. How long has this been happening?
b. How often has this been happening?
c. How severe are these pains?
d. Do these pains go away if you sit up for a few minutes?

25. Have you noticed any changes in the lower parts of your legs?

IF YES: a. Have these changes been any of the following:

b. How long has this been happening?

26. Do you get swelling in your feet, ankles or legs?

IF YES: a. How long has this been happening?
b. How often does this happen?
c. How severe is this swelling?
d. Where is this swelling located?

e. Does this swelling get worse with activity?

f. Does this swelling leave after a night's rest?

(For Women Only)

g. Does this swelling occur more at the
time of your menstrual period?

27. Do your fingers usually become numb
or blue even when slightly cold?

IF YES: a. How long has this been happening?
b. How often has this been happening?
c. How severe has the numbness been?

Turn To The Back Of This Page

Please print your name and today's date
in the appropriate spaces at the right:

28. Have you been having chest discomfort?

IF YES: a. How long has this been happening?

b. How often has this been happening?

c. Does this happen more than three times a day?

d. How long does your discomfort last?

e. Does this discomfort come back in 15 minutes?

f. How severe is your discomfort?

g. Have you had any of the following
discomforts in your chest:

h. Has your discomfort been located
in any of the following places:

i. Where does your chest discomfort roam or travel?

j. When do you feel the discomfort?

k. Do any of the following make
your chest discomfort worse:

l. Does your chest discomfort make you
stop or slow down your activity?

m. What relieves your chest discomfort?

n. Does your chest discomfort stop
within 5 minutes after rest?

o. Is your chest discomfort accompanied
by any of the following:

29. Have you had any trouble breathing lately?

IF YES: a. How long has this been happening?

b. How often has this been happening?

c. How severe has your breathing trouble been?

d. When does this breathing trouble occur?

END

Cardiovascular Screen

Name _____

Date _____

28. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ Yes ☐ No
 d. ☐ a few seconds ☐ a few minutes ☐ over an hr.
 e. ☐ Yes ☐ No
 f. ☐ severe ☐ moderately severe ☐ mild
 g. Mark (X) the appropriate answers
 ☐ stabbing pains
 ☐ crushing or squeezing feelings
 ☐ burning sensations
 ☐ fluttering sensations
 ☐ throbbing
 h. Mark (X) the appropriate answers:
 ☐ in the middle of the chest
 ☐ on the left side only
 ☐ on the right side only
 ☐ on both sides
 ☐ between the shoulder blades
 ☐ in the neck and jaw regions
 ☐ in the arm
 i. Mark (X) the appropriate answers
 ☐ to one or both arms
 ☐ to the chin or jaw
 ☐ to the back
 j. Mark (X) the appropriate answers:
 ☐ while sitting still
 ☐ during sleep so it wakens you
 ☐ while climbing stairs
 ☐ while bending over
 ☐ during sexual activity
 ☐ after a heavy meal
 ☐ when under emotional strain
 k. Mark (X) the appropriate answers
 ☐ walking
 ☐ running
 ☐ lying down
 ☐ cold weather
 l. ☐ Yes ☐ No
 m. Mark (X) the appropriate answers
 ☐ sitting up
 ☐ lying down
 ☐ walking around
 n. ☐ Yes ☐ No
 o. Mark (X) the appropriate answers:
 ☐ nausea
 ☐ shortness of breath
 ☐ fast heart beat
 ☐ gas or belching
 ☐ sweating
 ☐ light-headedness
 ☐ visual disturbances
29. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ severe ☐ moderately severe ☐ mild
 d. Mark (X) the appropriate answers
 ☐ when climbing stairs
 ☐ when at rest
 ☐ with emotional strain

21. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ severe ☐ moderately severe ☐ mild
 d. ☐ Yes ☐ No
 e. ☐ Yes ☐ No
 f. ☐ Yes ☐ No
 g. ☐ Yes ☐ No
22. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. Mark (X) the appropriate answers
 ☐ more than 3 a day
 ☐ about 1 a day
 ☐ more than 1 a week
 ☐ less than 1 a week
 c. Mark (X) the appropriate answers
 ☐ last an instant
 ☐ last about a minute
 ☐ last a few minutes or more
 d. Mark (X) the appropriate answers
 ☐ exercise
 ☐ getting upset
 ☐ eating a big meal
 ☐ just sitting or lying down
 e. Mark (X) the appropriate answers
 ☐ sitting up
 ☐ lying down
 ☐ walking around
23. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ severe ☐ moderately severe ☐ mild
 d. ☐ Yes ☐ No
 e. ☐ Yes ☐ No
24. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ severe ☐ moderately severe ☐ mild
 d. ☐ Yes ☐ No
25. ☐ Yes ☐ No
 a. Mark (X) the appropriate answers
 ☐ a darkening of the skin?
 ☐ a thickening or toughening of the skin?
 ☐ slow healing of leg ulcers?
 b. ☐ for 1 month ☐ for 1 year ☐ over 1 year
26. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ severe ☐ moderately severe ☐ mild
 d. Mark (X) the appropriate answers
 ☐ your right leg
 ☐ your right ankle or foot
 ☐ your left leg
 ☐ your left ankle or foot
 ☐ both legs
 ☐ both ankles or feet
 e. ☐ Yes ☐ No
 f. ☐ Yes ☐ No
 g. ☐ Yes ☐ No
27. ☐ Yes ☐ No
 a. ☐ for 1 month ☐ for 1 year ☐ over 1 year
 b. ☐ daily ☐ weekly ☐ monthly
 c. ☐ severe ☐ moderately severe ☐ mild

1. ☐ Yes ☐ No
 ☐ daily ☐ weekly ☐ monthly
2. ☐ Yes ☐ No
 ☐ daily ☐ weekly ☐ monthly
3. ☐ Yes ☐ No
 ☐ daily ☐ weekly ☐ monthly
4. ☐ Yes ☐ No
5. ☐ Yes ☐ No
6. ☐ Yes ☐ No
7. ☐ Yes ☐ No
 a. ☐ Yes ☐ No
 b. ☐ Yes ☐ No
 c. ☐ Yes ☐ No
 d. ☐ Yes ☐ No
 e. ☐ Yes ☐ No
 f. ☐ Yes ☐ No
 g. ☐ Yes ☐ No
 h. ☐ Yes ☐ No
 i. ☐ Yes ☐ No
 j. ☐ Yes ☐ No
 k. ☐ Yes ☐ No
 l. ☐ Yes ☐ No
 m. ☐ Yes ☐ No
 n. ☐ Yes ☐ No
 o. ☐ Yes ☐ No
 p. ☐ Yes ☐ No
 q. ☐ Yes ☐ No
 r. ☐ Yes ☐ No
8. ☐ Yes ☐ No
9. ☐ Yes ☐ No
10. ☐ Yes ☐ No
11. ☐ Yes ☐ No
12. ☐ Yes ☐ No
13. ☐ Yes ☐ No
14. ☐ Yes ☐ No
15. ☐ Yes ☐ No
 a. _____ Year ☐ No
 b. _____ Year ☐ No
 c. _____ Year ☐ No
 d. _____ Year ☐ No
 e. _____ Year ☐ No
 f. _____ Year ☐ No
16. _____ Year
 _____ Year
 _____ Year
17. ☐ Yes ☐ No
 a. ☐ Yes ☐ No
 b. ☐ Yes ☐ No
 c. ☐ Yes ☐ No
18. ☐ Yes ☐ No
 a. ☐ Yes ☐ No
 b. ☐ Yes ☐ No
 c. ☐ Yes ☐ No
 d. ☐ Yes ☐ No
19. ☐ Yes ☐ No
 a. ☐ Yes ☐ No
 b. ☐ Yes ☐ No
 c. ☐ Yes ☐ No
20. ☐ Yes ☐ No

Cardiovascular Screen

Name _____

Date _____ Patient No. _____

1. CHEST DISCOMFORT

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ more than three times a day
 ___ lasts seconds ___ lasts minutes ___ lasts hours
 ___ returns after 15 minutes
 ___ severe ___ moderately severe ___ mild

Kinds of Discomfort

- ___ stabbing pains
 ___ crushing or squeezing feelings
 ___ burning sensations
 ___ fluttering sensations
 ___ throbbing
Location Of
 ___ middle of the chest
 ___ left side only
 ___ right side only
 ___ on both sides
 ___ between shoulder blades
 ___ in the neck and jaw regions
 ___ in the arm

Radiates

- ___ to one or both arms
 ___ to the chin or jaw
 ___ to the back

Condition Of

- ___ while sitting still
 ___ during sleep so it awakens
 ___ while climbing stairs
 ___ while bending over
 ___ during sexual activity
 ___ after a heavy meal
 ___ under emotional strain

Aggravated By

- ___ walking
 ___ running
 ___ lying down
 ___ cold weather

___ slows down or stops activity

Relieved By

- ___ sitting up
 ___ lying down
 ___ walking around
 ___ stops after 5 minutes rest

Accompanied by

- ___ nausea
 ___ shortness of breath
 ___ fast heart beat
 ___ gas or belching
 ___ sweating
 ___ light-headedness
 ___ visual disturbances

2. BREATHING TROUBLE

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ severe ___ moderately severe ___ mild

Condition Of

- ___ when climbing stairs
 ___ when at rest
 ___ with emotional strain

3. AWAKENS SMOTHERING

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ severe ___ moderately severe ___ mild
 ___ continues sitting up
 ___ worsens lying flat

- ___ sleeps on two or more pillows
 ___ tires easily

4. UNUSUAL HEART BEATS

- ___ for 1 month ___ for 1 year ___ over 1 year

Frequency

- ___ more than 3 a day
 ___ about 1 a day
 ___ more than 1 a week
 ___ less than 1 a week

Duration

- ___ last an instant
 ___ last about a minute
 ___ last a few minutes or more

Aggravated By

- ___ exercise
 ___ getting upset
 ___ eating a big meal
 ___ just sitting or lying down

Relieved By

- ___ sitting up
 ___ lying down
 ___ walking around

5. PAINS OR CRAMPS IN LEGS WHILE WALKING

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ severe ___ moderately severe ___ mild
 ___ has to stop walking
 ___ relieved by short rest

6. PAINS OR CRAMPS IN LEGS WHILE SLEEPING

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ severe ___ moderately severe ___ mild
 ___ sitting up relieves

7. CHANGES IN LOWER PARTS OF LEGS

Type of Change

- ___ a darkening of the skin
 ___ a thickening or toughening of the skin
 ___ slow healing leg ulcers
 ___ for 1 month ___ for 1 year ___ over 1 year

8. SWELLING OF FEET, ANKLES, OR LEGS

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ severe ___ moderately severe ___ mild

Location Of

- ___ right leg
 ___ right ankle or foot
 ___ left leg
 ___ left ankle or foot
 ___ both legs
 ___ both ankles or feet
 ___ swelling worsens with activity
 ___ swelling leaves with night's rest

___ occurs more during menstrual period

9. COLD MAKES FINGERS NUMB OR BLUE

- ___ for 1 month ___ for 1 year ___ over 1 year
 ___ daily ___ weekly ___ monthly
 ___ severe ___ moderately severe ___ mild

10. DIZZY SPELLS OR LIGHTHEADEDNESS

- ___ daily ___ weekly ___ monthly

11. HOT FLASHES OR SOAKING SWEATS

- ___ daily ___ weekly ___ monthly

12. VEINS ACNE

- ___ daily ___ weekly ___ monthly

13. ILLNESSES

- ___ blood vessel trouble
 ___ varicose veins
 ___ phlebitis

- ___ heart trouble
 ___ heart murmur
 ___ angina
 ___ heart attack
 ___ coronary
 ___ myocardial infarction
 ___ coronary occlusion
 ___ arteriosclerosis
 ___ heart disease
 ___ enlarged heart
 ___ rheumatic heart
 ___ leaky heart
 ___ blocked heart
 ___ hole in heart
 ___ inflamed heart
 ___ blood clots
 ___ heart failure
 ___ aneurysm
 ___ concerned may have heart trouble

14. TESTS

- ___ high blood pressure
 ___ low blood pressure
 ___ high cholesterol
 ___ had EKG
 ___ abnormal EKG

15. MEDICINES

- ___ took heart medications past year

Years Last Used

- ___ anticoagulants
 ___ medicine for blood pressure
 ___ diuretics
 ___ nitroglycerine
 ___ digitalis
 ___ quinidine

16. SMOKING

- ___ cigarettes
 ___ pipe
 ___ cigars
Cigarette Rate
 ___ less than 10 a day
 ___ between 10 and 20 a day
 ___ between 20 and 40 a day
 ___ over 2 packs a day

- ___ for about a month
 ___ for about a year
 ___ for several years
 ___ used to smoke but quit

SUBJECT INFORMATION

Date _____ Subject Code Number _____

Name _____

Address _____

Phone (____) _____ Age _____ Weight _____

Occupation _____

Referred by _____

Drinking habits _____

Have been very drunk _____; Fairly drunk _____; Never very drunk _____

Marijuana habits _____

Have been very high _____; Fairly high _____; Never very high _____

Other drugs (amount used, frequency of use, etc.) _____

Person to contact in case of emergency (name, phone number): _____

Eyeglass prescription: RE _____ VA _____

LE _____ VA _____

Eye history (injuries, surgery, medications) _____

SUBJECT INITIALS: _____

DATE: / /

SUBJECTIVE CHECKLIST

Please check the appropriate point on the scale for each of the following areas:

MOUTH	MOIST	1	2	3	4	5	DRY
SKIN	MOIST	1	2	3	4	5	DRY
DISTANCE VISION	CLEAR	1	2	3	4	5	BLURRED
NEAR VISION	CLEAR	1	2	3	4	5	BLURRED
"HIGH"	NOT HIGH	1	2	3	4	5	AS HIGH AS I HAVE BEEN
TEMPERATURE	(COLD)	1	2	NORMAL	4	5	(HOT)
BALANCE	(WORSE)	1	2	NORMAL	4	5	(BETTER)
COORDINATION	(WORSE)	1	2	NORMAL	4	5	(BETTER)
TENSION	(WORSE)	1	2	NORMAL	4	5	(BETTER)
RESTLESSNESS	(MORE)	1	2	NORMAL	4	5	(LESS)
DEPRESSION	(MORE)	1	2	NORMAL	4	5	(LESS)
ANXIETY	(WORSE)	1	2	NORMAL	4	5	(BETTER)
FATIGUE	(WORSE)	1	2	NORMAL	4	5	(BETTER)
CONCENTRATION	(WORSE)	1	2	NORMAL	4	5	(BETTER)
CONFUSION	(WORSE)	1	2	NORMAL	4	5	(BETTER)
FORGETFULNESS	(WORSE)	1	2	NORMAL	4	5	(BETTER)

PULSE _____

BLOOD PRESSURE ____/____

PHYSICIAN'S INITIAL _____

TIME ____:____

Appendix 4

Anti-cholinergic drug experiments conducted under Army Contracts, 1978-1986

A. Jampolsky (Principal Investigator)

Drug/Dose	Effects studied (human subjects)	No. of Subjects	Contract No.
1. <u>Benactyzine</u> 0, 4.14 mg	Visual acuity, dynamic visual acuity, accommodation, contrast thresholds, pupil size and response, color vision, glare recovery, oculomotor function and intraocular pressure.	12	DAMD17-78-C-8837
2. <u>Atropine</u> a. 0, 2 mg/70 kg	Accommodation, dynamics of accommodation, phoria, pupil dynamics, static visual acuity, refraction, contrast sensitivity, glare recovery, intra-ocular pressure, depth perception, saccadic eye movements and postural stability, color matching.	10	DAMD17-80-C-8866
b. 0, 2 mg/70 kg	Visual search during rotation (1 Hz); repeated accommodative response.	6	
3. <u>Atropine</u> a. 0, 0.25, 0.50, 1.0, 2.0 mg/70kg	BLASER tracking, distance visual acuity, pupil size, pupillometry, accommodation, free space and in SRI accommodation in bright and dim light.	10	DAMD17-81-C-1216
b. 0, 1.0 and 2.0 mg/70kg	Hand-eye pursuit tracking while rotated at 0.5 Hz and simultaneously doing auditory discrimination.	10	
4. <u>Atropine and 2-PAM chloride</u>			
Atropine a. 4mg/70 kg	Pilot study. Physiological measures, vision tests.	N=2	DAMD17-83-C-3198
b. 4mg/70 kg; 2mg/70 kg; Placebo	Blaser tracking, physiological measures, vision measures.	N=10	

- | | | |
|---|--|------|
| c. 2-PAM Chloride
1200mg/70 kg | Pilot study. Physiological
measures, vision tests. | N=2 |
| d. 1200mg/70 kg
600mg/70 kg;
Placebo | Blaser tracking,
physiological measures,*
vision measures. | N=8 |
| e. Atropine 4mg/70kg+
2-PAM Cl. 1200mg/
70 kg | Pilot combination study,
physiological measures,
vision tests. | N=2 |
| f. Atropine 4 mg/70 kg and placebo
" 2 mg/70 kg and "
2-PAM Cl 1200 mg/70 kg and placebo
" " 600 mg/70 kg and placebo
Atropine 2 mg and 2-PAM Cl 600 mg
" 2 mg and " " 1200 mg
" 4 mg and " " 600 mg
" 4 mg and " " 1200 mg
Placebo and placebo | | N=10 |

Combination study. Tracking experiments
Blaser, physiological measures* and vision
measures. *** Memory and mood evaluations.

*Physiological measures: blood pressure, pulse rate, EKG, subjective estimate
of intoxication.

**Vision measures: visual acuity distance and near (high and low contrast);
accommodation, pupil size, contrast sensitivity, color discrimination.

***In addition to the above: pupil response, color matching, stereopsis,
increment thresholds under chromatic adaptation conditions, flicker
sensitivity.

APPENDIX 5

RAW DATA TABLES

Horizontal Tracking Error (microradians) Light 1200mg/70kg 2-PAM Cl

59	67	50
65	70	60
64	87	74
55	64	66
68	73	80
57	66	67
71	60	68
49	49	46

Means

61	67	63.875
----	----	--------

S.D.

7.309	10.876	11.47
-------	--------	-------

N

8	8	8
---	---	---

Horizontal Tracking Error (microradians) Light 600mg/70kg 2-PAM Cl

47	58	53
62	87	66
94	102	84
65	58	57
53	58	51
65	60	59
83	62	55
55	50	42

Means

65.5	66.875	58.375
------	--------	--------

S.D.

15.766	17.852	12.42
--------	--------	-------

N

8	8	8
---	---	---

Horizontal Tracking Error (microradians) Light Placebo

64	64	69
74	62	78
96	80	93
62	65	62
57	67	61
71	64	72
56	54	62
47	51	63

Means

65.875	63.375	70
--------	--------	----

S.D.

14.885	8.749	11.058
--------	-------	--------

N

8	8	8
---	---	---

Horizontal Tracking Error (microradians) Dark 1200mg/70kg 2-PAM Cl

106	94	97
129	146	150
164	177	151
122	105	148
112	123	146
124	144	133
120	123	137
88	101	98

Means

120.625	126.625	132.5
---------	---------	-------

S.D.

21.771	27.851	22.494
--------	--------	--------

N

8	8	8
---	---	---

Horizontal Tracking Error (microradians) Dark 600mg/70kg 2-PAM Cl

98	105	113
147	141	142
161	212	184
105	112	93
100	92	92
137	143	134
114	125	123
83	81	188

Means

118.125	126.375	133.625
---------	---------	---------

S.D.

27.216	40.932	36.812
--------	--------	--------

N

8	8	8
---	---	---

Horizontal Tracking Error (microradians) Dark Placebo

93	101	154
143	125	121
236	201	179
96	108	115
105	110	128
146	140	123
118	122	100
175	87	81

Means

139	124.25	125.125
-----	--------	---------

S.D.

48.303	34.927	30.348
--------	--------	--------

N

8	8	8
---	---	---

Pulse (beats/min)	1200mg/70kg 2-PAM Cl			
46	54	54	54	49
54	58	50	58	0
64	68	68	64	0
58	60	66	66	66
70	72	72	72	80
60	66	72	78	0
60	64	84	66	72
52	64	60	60	66
Means				
58	63.25	65.75	64.75	66.6
S.D.				
7.407	5.751	10.925	7.704	11.393
N				
8	8	8	8	5

Pulse (beats/min)	600mg/70kg 2-PAM Cl			
48	50	56	51	0
52	64	52	55	0
58	62	62	60	62
58	60	64	66	64
72	72	72	66	0
56	58	64	72	66
70	72	66	72	72
60	64	60	66	0
Means				
59.25	62.75	62	63.5	66
S.D.				
8.207	7.246	6.141	7.597	4.32
N				
8	8	8	8	4

Pulse (beats/min)	Placebo			
50	44	50	52	0
44	56	54	60	57
56	56	56	60	60
64	72	74	68	0
64	70	72	64	0
68	68	68	68	64
62	66	66	68	0
60	66	54	60	60
Means				
58.5	62.25	61.75	62.5	60.25
S.D.				
8.053	9.468	9.285	5.632	2.872
N				
8	8	8	8	4

Systolic B.P. (mb)	1200mg/70kg 2-PAM Cl			
104	108	112	118	110
118	128	128	137	0
128	138	138	128	0
120	126	132	128	118
110	116	120	126	118
106	110	120	120	0
110	110	130	125	110
120	118	136	128	118

Means				
114.5	119.25	127	126.25	114.8
S.D.				
8.264	10.58	8.944	5.776	4.382
N				
8	8	8	8	5

Systolic B.P. (mb)	600mg/70kg 2-PAM Cl			
108	108	110	112	0
116	125	124	115	0
124	130	130	124	128
120	130	130	120	130
106	110	110	108	0
105	108	110	105	126
118	118	118	118	118
118	118	118	118	0

Means				
114.375	118.375	118.75	115	125.5
S.D.				
7.09	9.257	8.548	6.347	5.26
N				
8	8	8	8	4

Systolic B.P. (mb)	Placebo			
104	107	104	100	0
108	111	108	122	116
134	130	130	130	128
128	130	130	126	0
115	110	110	110	0
106	110	116	110	116
118	118	128	120	0
110	112	112	118	118

Means				
115.375	116	117.25	117	119.5
S.D.				
10.783	9.181	10.58	9.798	5.745
N				
8	8	8	8	4

Diastolic B.P. (mb) 1200mg/70kg 2-PAM Cl

70	66	70	65	65
76	66	66	65	0
78	80	78	78	0
76	76	80	80	80
80	80	80	80	78
68	68	80	80	0
72	74	76	70	70
78	76	86	78	78
Means				
74.75	73.25	77	74.5	74.2
S.D.				
4.268	5.849	6.325	6.719	6.419
N				
8	8	8	8	5

Diastolic B.P. (mb) 600mg/70kg 2-PAM Cl

70	66	66	58	0
65	70	65	68	0
84	80	76	78	78
80	74	76	76	72
78	70	68	68	0
80	64	80	68	78
78	76	78	76	68
76	78	70	76	0
Means				
76.375	72.25	72.375	71	74
S.D.				
6.093	5.701	5.805	6.761	4.899
N				
8	8	8	8	4

Diastolic B.P. (mb) Placebo

68	70	66	53	0
64	65	58	64	70
76	76	80	70	76
76	80	76	76	0
80	78	70	80	0
80	60	74	76	70
68	70	70	80	0
68	68	70	72	76
Means				
72.5	70.875	70.5	71.375	73
S.D.				
6.211	6.792	6.655	9.149	3.464
N				
8	8	8	8	4

DVA Low Contrast # of Letters

57	57	60	57	60
55	55	55	55	64
55	54	55	54	55
61	60	60	60	60
60	60	60	58	60
59	60	59	59	59
52	51	51	51	52
61	60	59	60	59

Means

57.5 57.125 57.375 56.75 58.625

S.D.

3.295 3.482 3.335 3.196 3.623

N

8 8 8 8 8

DVA Low Contrast # of Letters 600mg/70kg 2-PAM Cl

56	55	55	55	55
59	59	60	60	60
56	55	55	55	55
60	60	59	59	60
61	63	65	63	61
58	58	58	58	60
57	49	52	52	51
60	59	59	58	61

Means

58.375 57.25 57.875 57.5 57.875

S.D.

1.923 4.234 3.944 3.423 3.72

N

8 8 8 8 8

DVA Low Contrast # of Letters Placebo

60	58	60	60	60
60	57	60	60	59
55	55	55	55	58
63	58	58	58	62
62	60	61	60	65
59	57	57	57	57
53	52	52	52	51
58	59	59	58	58

Means

58.75 57 57.75 57.5 58.75

S.D.

3.37 2.507 3.012 2.828 4.062

N

8 8 8 8 8

NVA Low Contrast # of Letters 1200mg/70kg 2-PAM Cl				
0	0	0	60	60
61	60	60	65	0
58	58	56	59	0
62	61	61	60	60
59	59	59	59	59
59	59	59	59	0
46	50	50	56	52
58	57	57	57	60
Means				
57.571	57.714	57.429	59.375	58.2
S.D.				
5.318	3.638	3.69	2.669	3.493
N				
7	7	7	8	5

NVA Low Contrast # of Letters 600mg/70kg 2-PAM Cl				
60	60	60	60	0
60	61	65	63	0
58	55	57	59	56
56	57	59	59	58
61	61	61	61	0
57	57	59	61	59
53	52	53	50	52
59	59	58	59	0
Means				
58	57.75	59	59	56.25
S.D.				
2.619	3.151	3.423	3.891	3.096
N				
8	8	8	8	4

NVA Low Contrast # of Letters Placebo				
60	60	60	60	0
0	0	0	60	60
55	56	55	59	54
61	61	61	61	0
61	62	60	61	62
58	58	57	58	59
53	54	52	54	0
57	59	58	58	59
Means				
57.857	58.571	57.571	58.875	58.8
S.D.				
3.078	2.82	3.207	2.295	2.95
N				
7	7	7	8	5

Pupil Size (mm) 1200mg/70kg 2-PAM Cl				
3	3.25	3.75	3.25	3
3	3.25	3.25	3.5	0
3.75	4	3.75	3.75	0
3.75	4.75	4.25	4	3.75
3.75	4.25	4	3.75	3.75
3.75	4.25	3.75	4	0
3.75	3.75	4	4	4
4	4.25	4	4	4

Means				
3.594	3.969	3.844	3.781	3.7
S.D.				
N				
8	8	8	8	5

Pupil Size (mm) 600mg/70kg 2-PAM Cl				
3.25	3.25	3	3.5	0
3.5	3.25	3.5	3.5	0
3.75	3.75	3.75	3.75	3.75
3.75	3.75	3.75	3.75	3.75
3.75	3.75	3.75	3.75	0
3.75	4.5	4.25	4	3.75
3.75	4	4.25	4	4
3.75	3.75	3.75	3.75	0

Means				
3.656	3.75	3.75	3.75	3.813
S.D.				
N				
8	8	8	8	4

Pupil Size (mm) Placebo				
3.25	3.25	3.25	3.5	0
3.5	3.5	3.5	3.75	3.25
3.75	3.75	3.75	3.75	3.75
3.75	3.75	3.75	3.75	0
4	4	3.75	4	3.75
3.75	3.75	4	3.75	4
3.75	3.75	3.75	3.75	0
3.75	3.75	3.75	3.75	4

Means				
3.688	3.688	3.688	3.75	3.75
S.D.				
N				
8	8	8	8	5

Accommodative Amplitude (cm) 1200mg/70kg 2-PAM Cl				
11.8	11.5	11.7	11.47	11.03
11.07	12.5	12.07	11.37	0
13.87	13.6	13.23	13.77	0
13.77	13.1	12.93	13.4	13.6
12.5	12.43	12.2	12	11.5
12.4	11.7	12.5	11.7	0
15.23	15.77	16.47	16.37	15.43
11.63	11.43	11.93	12.93	12
Means				
12.784	12.754	12.879	12.876	12.712
S.D.				
1.394	1.441	1.539	1.677	1.801
N				
8	8	8	8	5
Accommodative Amplitude (cm) 600mg/70kg 2-PAM Cl				
11.47	11.5	11.73	12	0
11.73	11.97	11.7	11.73	0
14.2	13.8	13.77	13.93	13.93
15.77	13.9	13.87	14.1	12.93
12.33	12.53	12.37	12.37	0
11.8	11.77	11.53	11.37	11.6
15.33	16	17	15.67	15.63
11.77	11.87	11.2	11.5	0
Means				
13.05	12.918	12.896	12.834	13.523
S.D.				
1.768	1.545	1.941	1.554	1.698
N				
8	8	8	8	4
Accommodative Amplitude (cm) Placebo				
11.53	11.07	11.6	11.53	0
11.03	10.93	11.5	11.77	11.07
14.07	13.77	14.67	13.07	13.93
12.33	12.13	12.07	12.35	0
12.3	12.2	12.27	11.93	0
11.37	11.13	11.77	11.23	10.33
15.13	15	15.17	15.43	0
11.4	11.37	11.63	11.7	11.2
Means				
12.395	12.2	12.585	12.376	11.633
S.D.				
1.461	1.465	1.47	1.355	1.579
N				
8	8	8	8	4

Pain Rating (0-4)	1200mg/70kg 2-PAM Cl			
3	3	2	0	0
-1	4	3.5	.1	-1
2	2.5	2	0	0
1	1.5	.75	0	0
3	2	2.5	0	-1
1	1	3	0	0

Means				
1.607	2.25	2.063	.013	0
S.D.				
1.059	.964	.971	.035	0
N				
7	8	8	8	5

Pain Rating (0-4)	600mg/70kg 2-PAM Cl			
3	2	1	.1	-1
1	1	.5	0	-1
1.5	1.5	.5	0	0
1.5	1.5	.5	.5	0
0	.25	0	0	-1
2	2	.5	0	0
2.5	3	1	0	0
1	1	1	0	-1

Means				
1.563	1.531	.625	.075	0
S.D.				
N				
8	8	8	8	4

Pain Rating (0-4)	Placebo			
0	0	0	0	-1
0	0	0	0	-1
0	0	0	0	0
0	0	0	0	-1
0	0	0	0	-1
1	0	0	0	-1
0	0	0	0	0

Means				
S.D.				
N				
8	8	8	8	3

Horizontal Error Light (microradians)			Placebo
0.294	.32	.285	
0.099	.1	.217	
0.171	.157	.164	
0.175	0.136	0.142	
0.169	0.138	0.133	
0.185	0.18	0.2	
0.17	0.178	0.169	
0.142	0.124	0.134	
0.218	0.2	0.23	
0.156	0.135	0.135	
Means			
0.178	0.167	0.181	
S.D.			
0.051	0.062	0.051	
N			
10	10	10	

Horizontal Error Light (microradians)			600mg/70kg 2-PAM Cl
0.338	0.24	0.323	
0.182	0.197	0.19	
0.096	0.177	0.108	
0.159	0.124	0.131	
0.113	0.117	0.121	
0.218	0.22	0.252	
0.17	999	0.259	
0.2	0.182	0.154	
0.161	0.176	0.172	
0.111	0.125	0.126	
Means			
0.175	0.173	0.184	
S.D.			
0.07	0.044	0.072	
N			
10	9	10	

Horizontal Error Light (microradians)			1200mg/70kg 2-PAM Cl
0.221	0.308	0.251	
0.213	0.157	0.203	
0.117	0.114	0.106	
0.138	0.128	0.284	
0.179	0.228	0.196	
0.224	0.186	0.243	
0.172	0.161	0.168	
0.189	0.142	0.133	
0.145	0.134	0.146	
0.158	0.17	0.146	
Means			
0.175	0.173	0.188	
S.D.			
0.037	0.058	0.058	
N			
10	10	10	

Horizontal Error Light (microradians)			2mg/70kg Atropine
0.146	0.153	0.335	
0.165	0.175	0.182	
0.13	0.095	0.092	
0.162	0.171	0.151	
0.136	0.147	0.148	
0.224	0.267	0.254	
0.149	0.149	0.14	
0.217	0.191	0.198	
0.19	0.179	0.181	
0.137	0.12	0.109	
Means			
0.166	0.165	0.179	
S.D.			
0.034	0.046	0.072	
N			
10	10	10	

Horizontal Error Light (microradians)			4mg/70kg Atropine
0.287	0.361	0.341	
0.192	0.227	0.235	
0.12	0.11	0.106	
0.161	0.171	0.15	
0.135	0.143	0.15	
0.219	0.241	0.268	
0.176	0.158	0.212	
0.21	999	0.216	
0.174	0.171	0.213	
0.122	0.163	0.297	
Means			
0.18	0.194	0.219	
S.D.			
0.051	0.074	0.071	
N			
10	9	10	

Horizontal Error Light (microradians)			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.207	0.231	0.224	
0.158	0.163	0.171	
0.104	0.099	0.102	
0.169	0.16	0.177	
0.172	0.186	0.201	
0.167	0.166	0.207	
0.163	0.172	0.148	
0.165	0.131	0.23	
0.129	0.161	0.152	
0.138	0.165	0.158	
Means			
0.157	0.163	0.177	
S.D.			
0.028	0.034	0.039	
N			
10	10	10	

Horizontal Error Light (microradians)			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.21	0.244	0.256	
0.222	0.215	0.235	
0.143	0.155	0.153	
0.265	0.188	0.181	
0.167	0.161	0.168	
0.182	0.203	0.228	
0.17	0.171	0.163	
0.154	0.142	0.188	
0.144	0.202	0.205	
0.136	0.135	0.273	

Means		
0.179	0.182	0.205
S.D.		
0.041	0.035	0.041
N		
10	10	10

Horizontal Error Light (microradians)			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.181	0.278	0.238	
0.156	0.13	0.14	
0.156	0.135	0.162	
0.184	0.196	0.167	
0.195	0.144	0.16	
0.152	0.204	0.186	
0.177	0.17	0.164	
0.145	0.145	0.128	
0.153	0.156	0.17	
0.135	0.156	0.131	

Means		
0.163	0.171	0.165
S.D.		
0.019	0.045	0.032
N		
10	10	10

Horizontal Error Light (microradians)			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.259	0.428	0.389	
0.243	0.316	0.22	
0.121	0.13	0.154	
0.176	0.144	0.182	
0.167	0.167	0.181	
0.204	0.247	0.2	
0.139	0.181	0.19	
0.133	0.137	0.154	
0.149	0.189	0.16	
0.144	0.231	0.366	

Means		
0.174	0.217	0.22
S.D.		
0.047	0.094	0.086
N		
10	10	10

Horizontal Error Dark (microradians)		Placebo
0.529	0.449	0.444
0.161	0.204	0.463
0.209	0.211	0.202
0.314	0.235	0.259
0.236	0.245	0.22
0.268	0.285	0.226
0.28	0.26	0.234
0.275	0.25	0.236
0.278	0.268	0.225
0.218	0.223	0.197
Means		
0.277	0.263	0.271
S.D.		
0.099	0.07	0.098
N		
10	10	10

Horizontal Error Dark (microradians)		600mg/70kg 2-PAM Cl
0.479	0.479	0.441
0.252	0.288	0.42
0.17	0.104	0.164
0.223	0.253	0.232
0.193	0.178	0.176
0.276	0.323	0.305
0.266	999	0.249
0.297	0.238	0.321
0.274	0.254	0.25
0.198	0.23	0.192
Means		
0.263	0.261	0.275
S.D.		
0.087	0.103	0.096
N		
10	9	10

Horizontal Error Dark (microradians)		1200mg/70kg 2-PAM Cl
0.381	0.441	0.296
0.233	0.297	0.276
0.17	0.152	0.176
0.275	0.249	0.438
0.259	0.294	0.255
0.283	0.269	0.335
0.212	0.249	0.231
0.289	0.267	0.236
0.263	0.205	0.223
0.246	0.262	0.26
Means		
0.261	0.269	0.273
S.D.		
0.055	0.074	0.072
N		
10	10	10

Horizontal Error Dark (microradians)			2mg/70kg Atropine
0.29	0.237	0.551	
0.338	0.459	0.262	
0.188	0.154	0.157	
0.269	0.333	0.353	
0.219	0.231	0.193	
0.28	0.312	0.354	
0.191	0.206	0.241	
0.303	0.319	0.324	
0.259	0.291	0.311	
0.2	0.248	0.228	

Means		
0.254	0.279	0.297
S.D.		
0.052	0.084	0.111
N		
10	10	10

Horizontal Error Dark (microradians)			4mg/70kg Atropine
0.344	0.538	0.481	
0.311	0.369	0.413	
0.167	0.208	0.243	
0.284	0.379	0.27	
0.194	0.188	0.24	
0.329	0.481	0.357	
0.252	0.285	0.4	
0.273	999	0.303	
0.247	0.256	0.414	
0.172	0.546	0.668	

Means		
0.257	0.361	0.379
S.D.		
0.063	0.137	0.13
N		
10	9	10

Horizontal Error Dark (microradians)			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.296	0.324	0.325	
0.282	0.308	0.389	
0.159	0.16	0.164	
0.352	0.317	0.389	
0.255	0.237	0.274	
0.238	0.262	0.215	
0.23	0.221	0.267	
0.23	0.285	0.241	
0.24	0.217	0.212	
0.188	0.245	0.247	

Means		
0.247	0.258	0.272
S.D.		
0.054	0.052	0.075
N		
10	10	10

Horizontal Error Dark (microradians)			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.274	0.407	0.385	
0.368	0.493	0.476	
0.222	0.256	0.289	
0.315	0.394	0.36	
0.22	0.254	0.245	
0.282	0.343	0.3	
0.247	0.301	0.266	
0.204	0.22	0.351	
0.225	0.306	0.337	
0.207	0.421	0.706	
Means			
0.256	0.34	0.372	
S.D.			
0.053	0.088	0.135	
N			
10	10	10	

Horizontal Error Dark (microradians)			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.412	0.414	0.384	
0.246	0.243	0.248	
0.264	0.251	0.213	
0.315	0.27	0.352	
0.396	0.209	0.238	
0.252	0.367	0.359	
0.231	0.25	0.237	
0.223	0.24	0.24	
0.278	0.279	0.296	
0.207	0.355	0.334	
Means			
0.282	0.288	0.29	
S.D.			
0.071	0.067	0.062	
N			
10	10	10	

Horizontal Error Dark (microradians)			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.442	0.782	0.885	
0.336	0.513	0.526	
0.274	0.264	0.335	
0.259	0.459	0.406	
0.208	0.254	0.278	
0.261	0.395	0.404	
0.234	0.298	0.291	
0.238	0.239	0.251	
0.199	0.354	0.265	
0.266	0.657	0.785	
Means			
0.272	0.422	0.443	
S.D.			
0.071	0.183	0.224	
N			
10	10	10	

Vertical Error	Light (microradians)	Placebo
0.084	0.077	0.094
0.048	0.045	0.052
0.053	0.061	0.044
0.07	0.052	0.053
0.05	0.042	0.039
0.054	0.055	0.05
0.094	0.066	0.052
0.039	0.04	0.033
0.057	0.054	0.057
0.04	0.037	0.042
Means		
0.059	0.053	0.052
S.D.		
0.018	0.013	0.017
N		
10	10	10

Vertical Error	Light (microradians)	600mg/70kg 2-PAM Cl
0.112	0.167	0.079
0.075	0.064	0.053
0.042	0.065	0.037
0.082	0.062	0.051
0.062	0.038	0.037
0.077	0.067	0.132
0.059	999	0.06
0.086	0.054	0.08
0.05	0.046	0.05
0.036	0.051	0.034
Means		
0.068	0.068	0.061
S.D.		
0.023	0.038	0.03
N		
10	9	10

Vertical Error	Light (microradians)	1200mg/70kg 2-PAM Cl
0.102	0.092	0.094
0.065	0.058	0.051
0.043	0.041	0.036
0.057	0.055	0.071
0.067	0.07	0.059
0.067	0.062	0.077
0.062	0.063	0.041
0.083	0.041	0.043
0.047	0.04	0.042
0.054	0.043	0.048
Means		
0.065	0.057	0.056
S.D.		
0.017	0.017	0.019
N		
10	10	10

Vertical Error	Light (microradians)	2mg/70kg Atropine
0.093	0.067	0.075
0.063	0.063	0.051
0.051	0.039	0.033
0.063	0.066	0.061
0.04	0.046	0.037
0.05	0.066	0.079
0.058	0.041	0.039
0.068	0.058	0.07
0.051	0.049	0.066
0.038	0.042	0.039
Means		
0.058	0.054	0.055
S.D.		
0.016	0.011	0.017
N		
10	10	10

Vertical Error	Light (microradians)	4mg/70kg Atropine
0.124	0.087	0.119
0.05	0.074	0.112
0.04	0.047	0.038
0.062	0.062	0.056
0.038	0.04	0.049
0.059	0.049	0.063
0.048	0.045	0.059
0.107	999	0.064
0.047	0.043	0.059
0.039	0.045	0.089
Means		
0.061	0.055	0.071
S.D.		
0.03	0.016	0.027
N		
10	9	10

Vertical Error	Light (microradians)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.076	0.069	0.072
0.051	0.061	0.061
0.034	0.031	0.035
0.094	0.077	0.098
0.076	0.055	0.049
0.051	0.075	0.073
0.061	0.041	0.044
0.072	0.058	0.064
0.047	0.045	0.042
0.044	0.053	0.217
Means		
0.061	0.057	0.075
S.D.		
0.018	0.015	0.053
N		
10	10	10

Vertical Error	Light (microradians)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.1	0.08	0.071
0.047	0.062	0.071
0.049	0.085	0.068
0.082	0.076	0.066
0.053	0.046	0.054
0.044	0.055	0.075
0.102	0.047	0.075
0.056	0.052	0.063
0.041	0.044	0.049
0.042	0.05	0.079

Means		
0.062	0.06	0.067
S.D.		
0.024	0.015	0.01
N		
10	10	10

Vertical Error	Light (microradians)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.072	0.077	0.067
0.068	0.061	0.055
0.059	0.054	0.059
0.087	0.138	0.072
0.052	0.043	0.038
0.072	0.053	0.053
0.045	0.038	0.037
0.051	0.047	0.037
0.044	0.044	0.045
0.045	0.042	0.123

Means		
0.06	0.06	0.059
S.D.		
0.015	0.03	0.026
N		
10	10	10

Vertical Error	Light (microradians)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.087	0.093	0.106
0.072	0.084	0.072
0.057	0.053	0.065
0.161	0.062	0.078
0.04	0.049	0.046
0.056	0.056	0.052
0.07	0.087	0.061
0.041	0.038	0.059
0.041	0.046	0.051
0.048	0.065	0.116

Means		
0.067	0.063	0.071
S.D.		
0.036	0.019	0.023
N		
10	10	10

Vertical Error	Dark (microradians)	Placebo
0.123	0.125	0.11
0.07	0.084	0.138
0.063	0.154	0.068
0.111	0.097	0.089
0.07	0.058	0.07
0.082	0.079	0.082
0.075	0.051	0.068
0.086	0.067	0.062
0.062	0.065	0.067
0.065	0.06	0.064
Means		
0.081	0.084	0.082
S.D.		
0.021	0.033	0.025
N		
10	10	10

Vertical Error	Dark (microradians)	600mg/70kg 2-PAM Cl
0.114	0.107	0.113
0.08	0.055	0.103
0.076	0.038	0.055
0.094	0.091	0.076
0.064	0.061	0.047
0.079	0.148	0.084
0.076	999	0.07
0.076	0.072	0.115
0.067	0.062	0.06
0.065	0.061	0.05
Means		
0.079	0.077	0.077
S.D.		
0.015	0.033	0.026
N		
10	9	10

Vertical Error	Dark (microradians)	1200mg/70kg 2-PAM Cl
0.135	0.213	0.12
0.078	0.107	0.061
0.053	0.05	0.057
0.093	0.106	0.14
0.085	0.081	0.08
0.101	0.091	0.09
0.082	0.077	0.071
0.097	0.067	0.082
0.066	0.064	0.05
0.069	0.08	0.07
Means		
0.086	0.094	0.082
S.D.		
0.023	0.046	0.028
N		
10	10	10

Vertical Error	Dark (microradians)	2mg/70kg Atropine
0.16	0.096	0.123
0.101	0.194	0.053
0.057	0.052	0.051
0.102	0.122	0.186
0.068	0.064	0.061
0.088	0.082	0.115
0.063	0.058	0.063
0.083	0.129	0.121
0.07	0.083	0.162
0.065	0.069	0.085
Means		
0.086	0.095	0.102
S.D.		
0.03	0.043	0.047
N		
10	10	10

Vertical Error	Dark (microradians)	4mg/70kg Atropine
0.093	0.129	0.107
0.094	0.095	0.198
0.061	0.071	0.079
0.093	0.122	0.092
0.086	0.057	0.082
0.071	0.086	0.106
0.078	0.081	0.116
0.091	999	0.096
0.081	0.069	0.135
0.056	0.147	0.172
Means		
0.08	0.095	0.118
S.D.		
0.014	0.031	0.039
N		
10	9	10

Vertical Error	Dark (microradians)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.098	0.093	0.082
0.049	0.064	0.092
0.048	0.046	0.046
0.14	0.169	0.154
0.098	0.064	0.072
0.078	0.084	0.081
0.073	0.055	0.07
0.076	0.106	0.058
0.063	0.059	0.063
0.071	0.112	0.301
Means		
0.079	0.085	0.102
S.D.		
0.027	0.037	0.076
N		
10	10	10

Vertical Error	Dark (microradians)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.1	0.083	0.093
0.076	0.169	0.12
0.062	0.094	0.147
0.121	0.169	0.137
0.075	0.073	0.073
0.088	0.081	0.158
0.2	0.141	0.107
0.062	0.081	0.138
0.07	0.077	0.091
0.059	0.14	0.246

Means		
0.091	0.111	0.131
S.D.		
0.043	0.039	0.049
N		
10	10	10

Vertical Error	Dark (microradians)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.166	0.1	0.105
0.094	0.064	0.072
0.094	0.071	0.079
0.143	0.161	0.176
0.144	0.057	0.071
0.084	0.097	0.093
0.067	0.06	0.063
0.064	0.084	0.063
0.069	0.06	0.091
0.068	0.08	0.138

Means		
0.099	0.083	0.095
S.D.		
0.038	0.031	0.036
N		
10	10	10

Vertical Error	Dark (microradians)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.158	0.161	0.171
0.083	0.105	0.175
0.106	0.084	0.102
0.122	0.176	0.215
0.063	0.068	0.081
0.074	0.117	0.106
0.068	0.124	0.073
0.108	0.07	0.063
0.147	0.08	0.097
0.077	0.166	0.257

Means		
0.101	0.115	0.134
S.D.		
0.033	0.041	0.066
N		
10	10	10

% Time On Target Light	Placebo
53.98	48.1
95.8	95.72
77.54	76.14
70.64	80.5
79.91	60.73
67.35	72.15
83.81	85.81
88.3	91.84
65.67	69.19
85.81	92.16

Means	
76.881	77.234
S.D.	
12.497	15.184
N	
10	10

% Time On Target Light	600mg/70kg 2-PAM Cl
47.48	48.46
89.87	86.14
66.41	71.06
78.35	84.51
91	92.2
61.21	63.61
88.74	999
81.04	88.63
72.45	81.4
92.79	76.14

Means	
76.934	76.906
S.D.	
14.983	13.943
N	
10	9

% Time On Target Light	1200mg/70kg 2-PAM Cl
58.44	56.31
88.55	91.82
63.51	88.83
79.08	83.41
77.33	63.41
65.27	43.41
83.53	87.47
84.11	88.83
82.48	89.97
86.14	82.65

Means	
76.844	77.611
S.D.	
10.585	16.956
N	
10	10

% Time On Target Light	2mg/70kg Atropine
81.97	86.88
83.35	77.02
84.48	85.4
78.74	67.94
90.13	84.36
62.34	61.66
91.11	90.15
81.53	81.16
74.98	77.86
83.9	83.64

Means	
81.253	79.607
S.D.	
8.177	8.862
N	
10	10

% Time On Target Light	4mg/70kg Atropine
54.56	42.76
79.66	74.78
62.79	70.36
75.07	75.9
91.05	90.17
71.81	63.94
86.53	85.43
73.57	999
80.33	79.21
81.02	78.5

Means	
75.639	73.45
S.D.	
10.811	13.836
N	
10	9

% Time On Target Light	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
64.1	70.79
85.89	86.43
96.03	96.41
79.07	70.03
55.24	52.08
64.64	60.29
88.33	86.11
92.4	89.85
85.98	83.3
87.59	79.91

Means	
79.927	77.52
S.D.	
13.787	13.931
N	
10	10

% Time On Target Light	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
61.91	44.64	38.42
81.57	74.9	74.69
75.48	69.7	75.6
73.18	70.79	76.72
65.36	68.65	62.21
77.88	56.54	70.05
89.21	85.75	81.5
88.46	87.29	65.27
83.19	69.77	70.13
88	81.89	42.43

Means		
78.424	70.992	65.702
S.D.		
9.552	13.036	14.478
N		
10	10	10

% Time On Target Light	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
68.63	67.3	65.44
92.17	93.19	89.75
78.85	75.57	77.87
72.32	73.53	67.93
59.5	59.95	57.38
70.37	65.72	69.92
86.86	86.42	89.5
88.77	91.9	92.34
75.89	82.72	80.75
77.97	80.29	84.31

Means		
77.133	77.659	77.519
S.D.		
10.075	11.246	11.882
N		
10	10	10

% Time On Target Light	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
61.46	52.05	43.36
76.21	71.57	70.49
80.58	84.39	71.36
77.52	77.79	68.84
80.41	78.17	73.07
69.92	60.87	65.4
91.69	82.9	73.94
91.9	91.75	75.1
73.97	70.2	71.42
77.96	59.71	24.56

Means		
78.162	72.94	63.754
S.D.		
9.137	12.479	16.539
N		
10	10	10

% Time On Target Dark	Placebo
27.02	23.04
87.17	82.13
58.81	44.69
33.98	41.76
56.11	90.72
48.72	53.44
53.6	67.59
47.46	48.42
37.13	33.46
64.4	64.24

Means	
51.44	54.949
S.D.	
17.174	21.262
N	
10	10

% Time On Target Dark	600mg/70kg 2-PAM Cl
21.79	18.13
71.11	63.57
60.88	71.46
46.55	41.12
66.65	69.98
48.48	48.13
59.24	999
44.94	60.51
39.46	48.18
68.01	66.89

Means	
52.711	54.219
S.D.	
15.363	17.251
N	
10	9

% Time On Target Dark	1200mg/70kg 2-PAM Cl
22.99	15.98
77.72	57.39
75.76	71.86
43.61	45.95
49.53	42.23
41.2	29.2
57.8	64.91
61.66	64.93
57.23	64.65
58.26	53.65

Means	
54.576	51.075
S.D.	
16.289	17.829
N	
10	10

% Time On Target Dark	2mg/70kg Atropine
39.3	58.54
61.05	72.97
71.04	77.51
31.68	18.88
53.6	54.47
46.6	33.48
66.21	70.53
56.73	51.26
38.5	38.13
62.19	41.12

Means	
52.69	51.689
S.D.	
13.149	18.953
N	
10	10

% Time On Target Dark	4mg/70kg Atropine
19.82	12.31
59.16	51.52
58.62	47.73
33.69	26.18
57.41	63.36
39.71	36.44
56.76	43.53
51.58	999
41.77	38.17
64.2	14.22

Means	
48.272	37.051
S.D.	
14.077	16.995
N	
10	9

% Time On Target Dark	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
25.94	23.45
65.06	62.52
64.35	68.46
33.44	34.15
40.94	38.39
51.32	50.37
66.88	60.07
51.87	43.54
44.22	55.44
54.57	52.7

Means	
49.859	48.909
S.D.	
13.793	13.971
N	
10	10

% Time On Target Dark	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
43.48	33.75
29.42	24.79
64.18	58.07
42.41	19.35
51.67	47.68
51.88	40.95
66.72	50.08
54.27	39.49
50.66	36.22
69.14	12.65

Means	
52.383	36.303
S.D.	
12.197	14.184
N	
10	10

% Time On Target Dark	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
21.54	17.31
75.1	77.23
53.2	63.03
27.06	30.61
39.35	40.11
50.31	35.48
66.11	66.1
50.21	48.13
58.66	43.45
57.77	38.79

Means	
49.931	46.024
S.D.	
16.616	18.067
N	
10	10

% Time On Target Dark	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
29.68	15.76
46.72	24.02
54.3	52.5
31.13	24.77
55.14	51.05
53.37	26.47
66.01	44.44
58.96	35.48
45.9	26.9
43.6	7.29

Means	
48.481	30.868
S.D.	
11.582	14.848
N	
10	10

% Time On Target	Light S.D.	Placebo
13.6	15.42	14.64
2.45	4.31	5.96
10.33	12.38	22.85
9.3	5.61	8.73
9.24	15.61	7.2
13.69	13.82	25.1
9.409	4.84	5.496
4.208	4.529	3.547
10.296	14.578	13.693
8.803	5.31	5.715

Means		
9.133	9.641	11.293
S.D.		
3.538	5.066	7.584
N		
10	10	10

% Time On Target	Light S.D.	600mg/70kg 2-PAM Cl
14.71	12.5	14.41
4.18	7.35	7.14
12.89	13.07	11.57
7.4	9.02	9.17
2.47	6.07	4.38
14.93	16.39	14.46
4.752	999	13.278
5.589	3.092	5.489
13.564	8.078	18.48
5.203	14.411	3.744

Means		
8.569	9.998	10.212
S.D.		
4.881	4.342	4.988
N		
10	9	10

% Time On Target	Light S.D.	1200mg/70kg 2-PAM Cl
13.22	16.12	9.99
3.31	5.04	7.37
21.93	6.74	7.43
8.55	7.01	19.02
11.64	11.11	13.48
21.84	20.54	17.94
8.7	6.415	4.774
5.987	6.12	4.317
7.874	7.674	10.539
5.92	12.296	5.386

Means		
10.897	9.907	10.025
S.D.		
6.441	5.082	5.283
N		
10	10	10

% Time On Target Light S.D. 2mg/70kg Atropine

10.12	3.92	10.77
5.63	10.78	9.75
10.88	7.32	10.93
12.83	14.56	14.32
4.8	10.03	10.75
15.6	11.68	22.45
4.194	5.653	4.103
6.908	9.118	6.175
6.725	9.224	16.154
8.603	11.162	6.008

Means

8.629	9.345	11.141
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S.D.

3.704	3.086	5.436
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N

10	10	10
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% Time On Target Light S.D. 4mg/70kg Atropine

16.09	12.31	20.71
8.49	4.33	14.75
20.39	19.33	16.98
12.4	10.31	11.14
3.79	4.33	11.24
7.71	15.4	15.12
5.398	8.731	11.448
15.651	999	14.567
3.59	14.488	16.73
6.535	15.203	9.621

Means

10.004	11.604	14.231
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S.D.

5.803	5.143	3.407
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N

10	9	10
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% Time On Target Light S.D. 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

17.77	8.05	7.7
7.83	7.27	14.19
3.45	3.87	3.65
9.34	7.7	6.62
11.62	16.92	15.03
17.95	20.52	24.03
2.572	3.574	4.553
5.362	5.422	9.046
6.16	11.619	8.895
7.519	12.453	7.188

Means

8.957	9.74	10.09
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S.D.

5.385	5.606	6.113
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N

10	10	10
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% Time On Target Light S.D. 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

15.2	10.67	14.81
8.56	11.62	10.9
7.78	16.61	14.06
10.46	10.94	8.26
12.47	13.24	10.86
14.46	12.66	13.18
4.759	9.24	6.574
13.225	7.521	11.979
12.56	17.508	12.4
6.992	9.945	10.004

Means

10.647	11.995	11.303
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S.D.

3.489	3.136	2.555
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N

10	10	10
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% Time On Target Light S.D. 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

12.35	12.43	18.18
4.85	2.33	5.44
9.73	9.96	13.01
13.4	10.58	13.5
13.03	15.03	4.72
13.9	17.61	11.58
5.315	7.741	4.162
5.063	5.762	5.659
10.895	8.65	16.404
9.972	10.277	14.51

Means

9.851	10.037	10.717
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S.D.

3.574	4.387	5.255
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N

10	10	10
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% Time On Target Light S.D. 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

15.18	15.7	12.28
7.34	10.1	13.63
7.35	6.22	7.8
9.44	7.31	15.77
3.36	10.37	12.44
15.09	18.69	21.13
5.084	10.387	11.871
6.208	5.927	13.124
14.415	13.615	14.677
11.241	14.251	13.182

Means

9.471	11.257	13.59
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S.D.

4.321	4.239	3.378
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N

10	10	10
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% Time On Target	S.D.	Placebo
14.77	15.95	11.92
5.95	9.87	15.29
17.08	13.88	13.03
11.15	9.51	21.54
13.37	8.14	13.72
15.75	15	20.37
13.473	15.474	15.366
23.862	13.077	15.984
14.977	14.96	16.848
17.26	15.415	13.386

Means		
14.764	13.128	15.745
S.D.		
4.592	2.881	3.132
N		
10	10	10

% Time On Target	S.D.	600mg/70kg 2-PAM Cl
15.35	12.86	9.95
10.08	19.52	13.35
12.82	8.2	7.05
14.23	10.09	19.13
16.33	8.42	8.56
20.57	15.53	15.94
11.865	999	7.624
12.022	8.441	10.879
16.124	21.062	22.878
15.881	16.029	8.918

Means		
14.527	13.35	12.428
S.D.		
2.999	4.94	5.324
N		
10	9	10

% Time On Target	S.D.	1200mg/70kg 2-PAM Cl
14.81	9.46	10.18
9.65	10.05	12.88
11.17	13.53	15.96
13.58	12.74	16.38
13.84	12.59	15.23
12.84	15.33	14.3
15.495	10.736	12.456
11.314	11.504	12.693
16.496	11.999	16.015
12.773	9.226	12.969

Means		
13.197	11.717	13.906
S.D.		
2.105	1.924	2.002
N		
10	10	10

% Time On Target	S.D.	2mg/70kg Atropine
24.79	14.53	8.11
10.37	13.61	15.33
14.81	14.37	13.57
12.08	14.81	17.35
13.66	19.14	16.1
8.73	16.28	14.51
11.506	9.531	19.033
16.543	8.872	12.087
20.048	17.138	13.214
16.517	11.205	24.592

Means		
14.905	13.949	15.39
S.D.		
4.822	3.279	4.41
N		
10	10	10

% Time On Target	S.D.	4mg/70kg Atropine
11.96	8.1	4.33
16	14.28	15.54
15.47	12.16	16.94
13.58	7.53	16.15
11.77	15.65	17.81
16.71	13.8	10.45
11.499	15.684	11.068
16.745	999	16.341
16.498	17.254	9.879
16.594	8.616	6.801

Means		
14.683	12.564	12.531
S.D.		
2.234	3.653	4.685
N		
10	9	10

% Time On Target	S.D.	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
10.26	15.18	18.57
11.85	16.15	16.67
12.6	15.58	10.93
14.89	12.98	17.96
9.5	11.98	16.59
16.47	12	16.4
9.773	13.364	9.937
17.991	12.261	17.937
15.617	12.894	13.912
12.947	14.819	16.015

Means		
13.19	13.721	15.492
S.D.		
2.956	1.57	2.97
N		
10	10	10

% Time On Target	S.D.	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
13.02	11.27	17.62
19.59	10.55	13.9
13	8.73	12.59
12.35	5.61	16.92
11.14	16.65	17.16
13.28	14.25	18.68
10.438	9.748	17.765
14.885	8.196	15.035
14.164	16.96	14.877
13.117	10.888	7.116

Means		
13.498	11.285	15.166
S.D.		
2.503	3.668	3.421
N		
10	10	10

% Time On Target	S.D.	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
10.41	13.69	14.82
9.39	9.82	11.48
14.16	16.79	13.41
16.59	11.53	14.82
12.47	21.77	12.05
14.54	14.56	16.02
6.043	8.275	11.23
9.559	11.899	7.738
12.727	14.442	18.683
10.646	12.611	15.438

Means		
11.654	13.539	13.569
S.D.		
3.061	3.791	3.072
N		
10	10	10

% Time On Target	S.D.	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
9.93	5.49	10.33
16.26	7.34	10.7
16.62	8.33	11.22
6.51	9.47	19.38
10.58	15.01	13.99
15.52	11.22	11.62
15.769	12.947	12.392
13.135	15.641	21.589
15.533	19.395	20.084
11.676	7.803	6.726

Means		
13.153	11.265	13.803
S.D.		
3.385	4.406	4.904
N		
10	10	10

Acquisition Time	Light (sec)	Placebo
1.24	1.468	1.216
1.167	1.12	1.296
1.058	1.17	1.129
1.364	1.294	1.195
1.228	1.203	1.145
1.05	1.107	1.178
2.29	2.704	2.261

Means		
1.17	1.314	1.197
S.D.		
N		
10	10	10

Acquisition Time	Light (sec)	600mg/70kg 2-PAM Cl
1.807	1.906	2.137
1.236	1.206	1.268
1.052	1.311	1.294
1.112	999	1.105
1.079	1.104	1.397
2.497	2.844	2.944

Means		
1.18	1.32	1.376
S.D.		
N		
10	9	10

Acquisition Time	Light (sec)	1200mg/70kg 2-PAM Cl
2.133	2.423	2.712
1.187	1.071	1.211
1.011	.951	1.047
1.131	1.153	1.216
1.104	1.075	.997
1.807	1.473	1.972

Means		
1.159	1.157	1.271
S.D.		
N		
10	10	10

Acquisition Time	Light (sec)	2mg/70kg Atropine
1.601	1.852	2.315
1.139	1.465	1.331
1.054	1.042	1.178
1.257	1.244	1.263
1.063	.918	1.075
1.005	1.162	1.488
2.985	2.605	2.77

Means		
1.266	1.265	1.393
S.D.		
N		
10	10	10

Acquisition Time Light (sec) 4mg/70kg Atropine

1.695	1.996	2.117
1.268	1.135	1.381
1.154	1.12	1.112
1.294	1.418	1.274
1.075	1.158	1.166
2.832	2.853	3.093

Means

1.253	1.364	1.375
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S.D.

N

10	9	10
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Acquisition Time Light (sec) 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.591	2.406	2.381
1.263	1.225	1.029
1.133	1.004	1.113
1.41	1.472	1.484
1.029	1.009	.926
1.65	1.654	1.712

Means

1.257	1.245	1.236
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S.D.

N

10	10	10
----	----	----

Acquisition Time Light (sec) 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

1.261	1.162	1.174
1.189	1.368	1.364
1.038	1.096	1.009
1.001	1.009	1.004
1.029	1.265	1.203
1.13	1.253	1.341
1.943	2.08	1.726

Means

1.109	1.201	1.205
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S.D.

N

10	10	10
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Acquisition Time Light (sec) 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

1.344	1.48	1.204
1.125	.951	1.029
1.091	1.153	.852
1.174	1.005	1.153
1.075	1.063	1.141
1.885	2.241	2.857

Means

1.12	1.21	1.193
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S.D.

N

10	10	10
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Acquisition Time	Light (sec)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
1.306	1.314	1.269
1.252	1.268	1.254
1.133	1.06	1.091
1.254	1.253	1.153
1.005	1.249	1.302
1.302	1.286	1.294
3.25	2.828	2.451
Means		
1.302	1.315	1.285
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	Placebo
1.216	1.011	1.108
1.327	1.24	1.575
1.654	1.456	1.348
1.17	1.145	1.41
1.542	1.34	1.278
1.063	1.228	1.249
1.302	1.426	1.398
1.087	1.224	1.668
3.072	2.871	3.063

Means		
1.443	1.403	1.499
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	600mg/70kg 2-PAM Cl
1.154	1.02	1.104
2.162	2.265	2.001
1.497	1.517	1.553
1.377	1.468	1.377
1.158	1.067	1.213
1.559	999	1.447
1.397	1.443	1.451
3.051	3.25	3.312

Means		
1.528	1.531	1.513
S.D.		
N		
10	9	10

Acquisition Time	Dark (sec)	1200mg/70kg 2-PAM Cl
1.034	1.137	1.195
2.481	2.902	2.638
1.393	1.538	1.397
1.079	1.153	.988
1.17	1.199	1.116
1.548	1.418	1.426
1.377	1.244	1.369
1.753	1.927	2.001

Means		
1.333	1.436	1.431
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	2mg/70kg Atropine
1.116	.988	.955
1.555	2.109	2.377
1.728	1.803	1.597
1.22	1.244	1.373
1.645	1.439	1.484
1.364	1.368	1.195
1.022	.955	.868
1.265	1.158	1.625
2.956	3.014	2.981

Means		
1.479	1.505	1.554
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	4mg/70kg Atropine
1.135	1.22	.926
2.249	2.175	2.456
1.398	1.501	1.679
1.269	1.294	1.306
1.6	1.629	1.451
1.174	1.297	1.195
1.497	1.381	1.191
3.469	2.423	2.278

Means		
1.57	1.57	1.422
S.D.		
N		
10	9	10

Acquisition Time	Dark (sec)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
1.071	.992	1.156
1.042	1.011	1.12
2.58	2.386	2.369
1.311	1.703	.965
1.22	1.199	1.203
1.695	1.716	1.629
1.199	1.022	1.195
1.253	1.24	1.25
2.516	2.137	2.328

Means		
1.482	1.452	1.42
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
1.319	1.323	1.387
1.34	1.142	1.393
1.263	1.24	1.637
1.526	1.687	1.571
1.166	1.191	1.174
1.224	1.224	1.206
1.042	1.253	.98
1.596	1.36	1.65
1.6	1.451	1.538
2.414	2.162	1.534

Means		
1.449	1.403	1.407
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
1.555	1.873	1.346
1.116	1.426	.897
1.015	1.315	1.174
1.191	1.108	1.24
1.298	1.278	1.091
1.269	1.389	1.348
1.305	1.286	1.377
2.638	2.551	2.485

Means		
1.332	1.466	1.311
S.D.		
N		
10	10	10

Acquisition Time	Dark (sec)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
1.075	.667	1.437
1.107	1.475	1.203
1.305	1.774	1.55
1.855	1.707	1.488
1.29	1.323	1.422
1.6	1.267	1.472
1.269	1.596	1.191
1.741	1.583	1.588
2.472	2.216	1.72

Means		
1.469	1.483	1.439
S.D.		
N		
10	10	10

Pulse (beats/min)	Morning	Placebo						
83	6.4	85	84	64	79	81	78	77
58	1.87	60	49	999	51	55	52	58
57.25	2.86	54	46	55	54	53	56	54
61.25	3.77	59	57	60	59	57	58	66
67.5	2.29	56	54	51	55	57	59	59
72.5	3.5	68	65	61	64	73	74	72
81	9	68	56	58	999	55	83	999
69.75	7.12	49	45	62	67	58	59	59
50	1.87	53	47	45	48	47	49	44
79	5.48	67	67	69	76	80	78	80

Means								
67.925	4.416	61.9	57	58.333	61.444	61.6	64.6	63.222
S.D.								
11.174	2.462	10.482	12.166	7.176	10.899	11.9	12.331	11.584
N								
10	10	10	10	9	9	10	10	9

Pulse (beats/min)	Morning	600mg/70kg 2-PAM	Cl					
73.5	3.28	59	62	58	64	62	70	64
81.75	6.68	58	62	69	65	65	73	68
65	1.22	57	63	65	62	61	59	67
68.75	2.38	101	59	60	56	66	64	67
76	.71	59	60	60	61	55	59	64
66.25	1.09	59	54	72	65	47	66	56
69.25	3.49	50	44	43	999	999	999	999
68.25	12.58	49	48	49	63	61	53	59
61.75	1.09	49	48	55	54	55	52	53
82	2.92	72	79	83	81	81	80	79

Means								
71.25	3.544	61.3	57.9	61.4	63.444	61.444	64	64.111
S.D.								
6.888	3.633	15.514	10.082	11.539	7.634	9.409	9.301	7.656
N								
10	10	10	10	10	9	9	9	9

Pulse (beats/min)	Morning	1200mg/70kg 2-PAM	Cl					
78.25	14.57	56	999	64	62	63	64	64
81.5	6.65	80	61	60	63	65	71	64
55.75	3.83	49	57	51	56	52	52	53
62.25	2.38	67	62	63	63	76	54	60
59.25	4.38	48	48	53	52	50	52	55
63.25	3.27	60	60	61	59	60	59	60
70	4.34	52	52	53	58	55	49	59
73.5	12.89	51	61	50	53	61	64	65
63.25	2.49	56	50	51	56	56	56	55
76.25	14.94	56	63	65	68	69	71	73

Means								
68.325	6.974	57.5	57.111	57.1	59	60.7	59.2	60.8
S.D.								
8.777	5.107	9.687	5.667	6.027	5.011	7.973	7.955	5.959
N								
10	10	10	9	10	10	10	10	10

Pulse (beats/min)	Morning	2mg/70kg Atropine						
74.75	3.96	62	71	77	84	86	83	89
66.25	4.44	47	57	999	88	88	73	80
61	3.74	60	78	87	94	98	93	93
62	1.22	76	106	121	95	93	92	96
76.5	3.84	68	69	73	87	85	84	80
62.75	1.3	71	91	84	82	103	81	79
70	0	59	75	75	77	76	76	71
69.5	4.92	52	68	88	94	86	91	84
57.5	2.06	43	63	78	80	81	79	84
82.3	1.89	68	91	92	99	97	95	96

Means								
68.255	2.737	60.6	76.9	86.111	88	89.3	84.7	85.2
S.D.								
7.844	1.647	10.69	14.963	14.598	7.303	8.327	7.675	8.203
N								
10	10	10	10	9	10	10	10	10

Pulse (beats/min)	Morning	4mg/70kg Atropine						
71.75	1.92	56	83	92	98	100	99	99
79.25	2.86	70	107	108	107	105	103	105
56.75	3.7	74	85	97	104	105	99	101
63	3.67	83	100	99	95	97	92	97
71.75	5.63	75	92	91	94	98	99	95
63	1.22	80	101	100	98	99	101	99
61.7	2.5	61	83	86	89	92	89	88
70.25	4.6	90	999	999	999	999	999	999
58	1.58	60	97	97	88	91	86	88
78	5.79	72	92	89	99	97	95	93

Means								
67.345	3.347	72.1	93.333	95.444	96.889	98.222	95.889	96.111
S.D.								
7.97	1.62	10.785	8.588	6.692	6.254	4.868	5.776	5.732
N								
10	10	10	9	9	9	9	9	9

Pulse (beats/min)	Morning	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl						
74.5	2.59	55	60	80	90	90	91	78
100	3.54	95	68	88	88	97	98	95
65.5	9.4	62	102	91	93	97	88	92
61.5	1.12	60	95	110	114	104	95	98
57.5	3.5	47	59	66	70	71	999	999
69.25	4.44	69	84	91	87	92	89	91
67	9.82	59	68	71	78	79	73	75
68.25	5.07	56	75	88	96	91	91	92
61.25	1.92	44	52	62	999	999	999	999
70.5	2.69	55	76	87	92	92	90	94

Means								
69.525	4.409	60.2	73.9	83.4	89.778	90.333	89.375	89.375
S.D.								
11.814	2.972	14.148	16.01	14.159	12.153	9.899	7.386	8.28
N								
10	10	10	10	10	9	9	8	8

Pulse (beats/min)	Morning	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl						
82.25	5.36	88	94	93	101	99	95	95
61	4.7	69	113	111	108	111	109	108
64.75	5.54	77	95	106	103	97	103	98
58.25	5.67	92	100	98	96	89	90	88
79.75	8.29	81	85	86	84	88	83	60
70	3.94	94	100	101	97	98	97	91
60.25	1.09	61	80	80	84	85	82	83
78.75	8.17	60	90	94	93	93	97	116
74	1	70	85	85	86	84	89	87
69	2.35	92	100	105	98	97	95	97
Means								
69.8	4.611	78.4	94.2	95.9	95	94.1	94	92.3
S.D.								
8.692	2.577	12.972	9.682	10.137	8.233	8.103	8.38	15.085
N								
10	10	10	10	10	10	10	10	10
Pulse (beats/min)	Morning	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl						
77.25	2.05	61	66	75	89	93	82	87
77.25	3.49	54	71	67	82	74	74	79
57.75	3.42	58	127	55	67	72	69	75
70.75	3.77	62	88	111	105	105	100	96
69.75	3.83	53	65	66	75	75	76	77
65.25	1.92	63	91	103	104	103	101	98
67	3.16	56	65	72	78	75	72	68
74.25	3.7	55	70	81	90	88	90	81
65.3	2.49	52	77	78	80	76	999	81
73.5	2.06	71	81	92	999	96	999	98
Means								
69.805	2.989	58.5	80.1	80	85.556	85.7	83	84
S.D.								
6.141	.776	5.836	18.947	17.378	12.778	12.841	12.593	10.403
N								
10	10	10	10	10	9	10	8	10
Pulse (beats/min)	Morning	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl						
91	12.7	72	110	115	120	117	118	113
67	4.18	69	109	114	113	110	109	108
67.25	2.23	66	107	999	107	110	108	112
64.5	6.73	74	104	124	120	111	105	103
63.25	.43	66	85	86	91	91	88	84
73	0	999	107	104	102	100	97	94
65.75	5.17	73	75	79	81	82	83	77
65	4.06	56	57	84	94	96	93	111
71	1.87	71	85	87	87	92	999	83
71.75	2.68	99	111	110	110	107	108	110
Means								
69.95	4.005	71.778	95	100.333	102.5	101.6	101	99.5
S.D.								
8.093	3.692	11.573	18.529	16.485	13.77	11.147	11.402	13.802
N								
10	10	9	10	9	10	10	9	10

Pulse (beats/min)	Afternoon	Placebo						
83	66	107	100	82	93	74	62	83
58	58	63	61	51	63	999	69	999
57.25	59	63	63	58	63	55	55	56
61.25	999	61	65	70	60	53	59	999
67.5	61	61	58	61	66	67	67	75
72.5	999	62	60	59	60	61	71	999
81	65	65	999	71	67	60	78	78
69.75	999	54	57	54	56	72	75	999
50	999	58	55	54	55	50	57	62
79	78	77	92	76	77	67	72	72

Means								
67.925	64.5	67.1	67.889	63.6	66	62.111	66.5	71
S.D.								
11.174	7.342	15.213	16.344	10.49	11.363	8.462	7.892	10.159
N								
10	6	10	9	10	10	9	10	6

Pulse (beats/min)	Afternoon	600mg/70kg 2-PAM Cl						
73.5	69	74	76	76	80	69	93	999
81.75	999	55	56	56	52	50	84	83
65	999	61	71	56	72	64	59	999
68.75	74	63	68	64	61	61	67	75
76	999	63	64	65	67	66	112	999
66.25	70	999	71	61	63	60	66	999
69.25	999	73	64	70	65	56	66	71
68.25	61	49	54	53	74	45	55	999
61.75	57	62	68	67	60	55	61	68
82	79	73	78	80	78	69	81	999

Means								
71.25	68.333	63.667	67	64.8	67.2	59.5	74.4	74.25
S.D.								
6.888	8.14	8.529	7.775	8.804	8.779	8.017	17.902	6.5
N								
10	6	9	10	10	10	10	10	4

Pulse (beats/min)	Afternoon	1200mg/70kg 2-PAM Cl						
78.25	999	68	68	66	71	75	80	64
81.5	64	61	65	74	79	53	82	999
55.75	74	62	62	64	66	55	53	63
62.25	999	70	66	63	67	63	61	999
59.25	57	999	59	57	60	60	65	59
63.25	59	69	75	65	65	62	65	66
70	999	83	62	65	55	54	67	999
73.5	60	59	60	69	59	46	62	57
63.25	58	62	66	59	60	56	69	999
76.25	67	58	62	60	63	999	72	66

Means								
68.325	62.714	65.778	64.5	64.2	64.5	58.222	67.6	62.5
S.D.								
8.777	6.102	7.807	4.673	4.962	6.868	8.151	8.72	3.728
N								
10	7	9	10	10	10	9	10	6

Pulse (beats/min)	Afternoon	2mg/70kg Atropine						
74.75	999	70	67	77	72	59	62	999
66.25	65	52	56	60	50	43	68	78
61	999	67	66	65	64	61	55	999
62	83	74	69	64	65	72	61	63
76.5	999	64	63	70	74	999	72	999
62.75	74	60	60	58	60	54	66	70
70	62	59	59	57	61	53	66	999
69.5	72	62	63	63	60	56	55	87
57.5	67	61	62	61	60	61	79	65
82.3	85	81	88	81	80	82	72	999

Means								
68.255	72.571	65	65.3	65.6	64.6	60.111	65.6	72.6
S.D.								
7.844	8.81	8.313	8.87	8.03	8.631	11.297	7.648	9.915
N								
10	7	10	10	10	10	9	10	5

Pulse (beats/min)	Afternoon	4mg/70kg Atropine						
71.75	83	83	85	82	99	61	71	89
79.25	88	89	75	74	80	67	71	999
56.75	134	69	70	74	74	83	63	61
63	999	70	75	64	72	60	59	999
71.75	93	79	74	68	80	73	69	74
63	999	66	70	69	68	59	67	999
61.7	79	69	71	75	73	79	59	63
70.25	81	81	74	61	75	61	53	65
58	80	73	74	96	73	57	65	999
78	90	84	85	79	80	75	68	78

Means								
67.345	91	76.3	75.3	74.2	77.4	67.5	64.5	71.667
S.D.								
7.97	18.095	7.875	5.458	10.02	8.566	9.324	5.949	10.764
N								
10	8	10	10	10	10	10	10	6

Pulse (beats/min)	Afternoon	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl						
74.5	78	74	84	75	78	76	62	999
100	81	65	65	57	60	62	83	80
65.5	999	70	69	68	72	63	62	999
61.5	86	67	60	59	56	54	71	65
57.5	66	62	61	59	59	51	77	66
69.25	999	66	69	65	66	60	72	999
67	67	58	58	58	59	47	65	64
68.25	70	70	68	67	71	53	62	999
61.25	63	64	72	66	68	62	73	70
70.5	81	68	72	72	68	66	63	71

Means								
69.525	74	66.4	67.8	64.6	65.7	59.4	69	69.333
S.D.								
11.814	8.519	4.526	7.54	6.204	7.04	8.435	7.364	5.922
N								
10	8	10	10	10	10	10	10	6

Pulse (beats/min)	Afternoon	4mg/70kg	Atropine & 600mg/70kg	2-PAM Cl				
82.25	999	88	89	82	101	70	71	999
61	87	87	78	78	77	64	63	102
64.75	78	79	78	78	76	66	55	59
58.25	83	64	66	62	69	72	59	999
79.75	71	72	75	75	74	71	999	65
70	84	999	76	77	73	63	70	999
60.25	83	999	69	67	64	56	60	64
78.75	85	86	71	71	70	57	57	999
74	76	72	78	75	77	67	65	69
69	999	87	84	88	86	72	71	68

Means								
69.8	80.875	79.375	76.4	75.3	76.7	65.8	63.444	71.167
S.D.								
8.692	5.384	9.102	6.818	7.364	10.35	5.846	6.167	15.51
N								
10	8	8	10	10	10	10	9	6

Pulse (beats/min)	Afternoon	2mg/70kg	Atropine & 1200mg/70kg	2-PAM Cl				
77.25	71	97	79	76	69	70	92	72
77.25	53	69	76	63	54	51	69	999
57.75	63	57	55	58	62	51	67	67
70.75	83	71	67	64	69	999	53	53
69.75	999	66	68	60	67	61	73	999
65.25	999	999	66	73	75	999	999	77
67	59	52	57	51	50	64	59	999
74.25	60	60	79	57	62	53	51	54
65.3	999	65	67	67	69	51	75	999
73.5	82	86	79	77	80	58	71	999

Means								
69.805	67.286	69.222	69.3	64.6	65.7	57.375	67.778	64.6
S.D.								
6.141	11.701	14.211	8.858	8.631	9.044	7.15	12.528	10.738
N								
10	7	9	10	10	10	8	9	5

Pulse (beats/min)	Afternoon	4mg/70kg	Atropine & 1200mg/70kg	2-PAM Cl				
91	90	99	120	96	91	68	85	62
67	93	89	71	74	73	53	87	75
67.25	82	79	76	78	85	75	58	999
64.5	100	80	89	76	64	60	57	67
63.25	80	67	66	64	65	60	66	999
73	89	71	78	73	76	70	69	70
65.75	72	69	68	66	64	58	77	999
65	82	70	79	71	72	58	69	84
71	999	76	75	80	77	58	74	999
71.75	100	96	96	94	97	94	60	999

Means								
69.95	87.556	79.6	81.8	77.2	76.4	65.4	70.2	71.6
S.D.								
8.093	9.409	11.472	16.233	10.602	11.452	12.085	10.591	8.385
N								
10	9	10	10	10	10	10	10	5

Systolic	B.P.	Morning	Measurements	Placebo				
137.8	8.3	130	131	133	131	122	137	127
124.75	6.68	110	116	999	128	127	121	131
107.5	5.36	110	100	114	113	116	114	112
132.75	2.49	121	121	126	142	136	136	128
99.75	1.92	91	88	89	99	101	95	97
147	1	139	144	146	139	153	148	136
126	0	126	121	116	999	141	132	999
115	4.21	122	116	125	132	116	125	121
111.75	2.28	109	100	111	118	110	119	114
116.75	4.6	115	118	129	125	123	132	125

Means								
121.905	3.684	117.3	115.5	121	125.222	124.5	125.9	121.222
S.D.								
14.532	2.614	13.4	16.181	16.093	13.452	15.415	14.746	11.893
N								
10	10	10	10	9	9	10	10	9

Systolic	B.P.	Morning	Measurements	600mg/70kg 2-PAM Cl				
134.75	1.3	124	129	131	143	134	134	135
133	3.94	105	121	120	130	126	132	136
116.5	2.69	100	102	99	121	123	127	113
133.75	3.63	128	120	118	139	133	146	137
98	4.53	94	95	97	105	106	108	100
146.5	4.27	137	144	145	153	152	148	134
122	3.24	111	108	116	999	999	999	999
114.75	2.49	121	109	117	130	146	141	127
108.75	1.92	99	99	109	111	117	113	117
134.25	3.96	119	121	121	134	132	131	131

Means								
124.225	3.197	113.8	114.8	117.3	129.556	129.889	131.111	125.556
S.D.								
14.745	1.067	14.18	15.069	14.119	15.249	14.049	13.661	12.827
N								
10	10	10	10	10	9	9	9	9

Systolic	B.P.	Morning	Measurements	1200mg/70kg 2-PAM Cl				
146	1.58	123	999	131	126	138	142	141
136.25	7.82	124	126	121	133	133	121	128
110.5	5.94	99	114	106	122	123	116	115
133.5	1.8	133	132	125	130	146	135	135
100.25	3.11	100	103	106	123	122	122	131
146.25	1.48	136	139	140	155	155	155	154
120	2.24	114	120	123	136	133	138	139
120.5	7.4	117	122	130	147	145	151	142
105	2.74	100	91	100	117	109	119	109
127.75	2.86	116	130	126	139	138	133	139

Means								
124.6	3.697	116.2	119.667	120.8	132.8	134.2	133.2	133.3
S.D.								
16.212	2.423	13.365	15.042	12.813	11.83	13.456	13.612	13.292
N								
10	10	10	9	10	10	10	10	10

Systolic B.P.	Morning Measurements	2mg/70kg Atropine						
138.75	5.67	135	116	126	131	133	127	134
140	2.12	113	117	999	125	129	131	129
116.75	5.36	111	112	119	123	113	121	115
133.5	2.06	119	116	103	121	137	124	131
101	2.74	91	92	91	91	91	99	94
141.75	3.11	138	157	165	165	158	156	158
114	14	111	112	121	121	115	126	116
118.3	3.83	106	131	130	122	125	121	114
108.25	1.92	99	104	114	118	116	109	124
123	2.94	130	129	116	124	119	123	118

Means								
123.53	4.375	115.3	118.6	120.556	124.1	123.6	123.7	123.3
S.D.								
14.298	3.627	15.341	17.513	20.44	17.885	17.671	14.735	16.687
N								
10	10	10	10	9	10	10	10	10

Systolic B.P.	Morning Measurements	4mg/70kg Atropine						
130	1.87	126	118	113	127	139	123	129
126	3.61	106	107	114	119	122	126	125
109	4.18	107	118	119	106	102	101	106
128.75	2.86	126	133	130	125	124	125	129
108.5	2.6	97	107	112	95	98	107	97
149.75	1.48	167	186	186	147	152	147	153
118.7	3.3	110	112	109	111	113	111	117
123.5	2.06	127	999	999	999	999	999	999
102.5	3.5	103	119	137	125	100	122	115
132.25	9.6	129	125	126	151	139	123	133

Means								
122.895	3.506	119.8	125	127.333	122.889	121	120.556	122.667
S.D.								
13.894	2.303	20.258	24.331	23.896	18.086	19.41	13.324	16.355
N								
10	10	10	9	9	9	9	9	9

Systolic B.P.	Morning Measurements	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl						
144.25	1.64	127	136	124	138	134	139	139
137.5	1.66	116	110	126	117	125	132	129
115.25	2.28	110	109	113	127	125	119	122
142.25	2.59	132	141	140	140	141	137	134
102.5	1.12	95	105	112	115	111	999	999
145.75	3.96	164	168	176	145	143	135	128
123.25	2.28	106	112	115	133	131	135	137
117.5	6.26	121	129	134	131	127	124	121
117.5	2.69	101	105	109	999	999	999	999
118.5	1.8	122	124	129	134	133	129	131

Means								
126.425	2.628	119.4	123.9	127.8	131.111	130	131.25	130.125
S.D.								
14.884	1.494	19.518	20.223	19.764	10.043	9.592	6.861	6.512
N								
10	10	10	10	10	9	9	8	8

Systolic	B.P.	Morning Measurements		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
141.75	3.7	120	127	116	127	128	137	130
118.5	6.6	104	104	125	118	118	118	118
126	5.43	105	119	122	121	122	117	113
134.75	3.77	126	119	122	131	128	134	134
105	3.24	96	102	106	115	113	115	122
151.25	6.42	171	176	188	162	166	159	143
121.5	4.39	122	118	118	125	127	114	126
115.75	10.18	111	123	119	122	115	119	123
119.25	1.09	125	110	118	120	116	127	118
125	4.95	129	134	149	144	136	135	138

Means								
125.875	4.977	120.9	123.2	128.3	128.5	126.9	127.5	126.5
S.D.								
13.463	2.439	20.755	21.012	23.641	14.324	15.531	14.113	9.618
N								
10	10	10	10	10	10	10	10	10

Systolic	B.P.	Morning Measurements		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
141.5	1.12	130	121	123	134	131	136	138
133.75	3.27	114	120	130	136	142	138	139
115	1.58	108	107	107	124	125	118	126
137.25	2.59	116	122	111	119	114	128	137
105	1.87	91	95	100	109	111	115	108
151.75	6.46	154	190	195	199	195	195	192
121.75	5.26	110	113	120	132	134	136	133
114	1.87	113	121	139	109	123	121	103
105.7	.94	116	120	126	129	128	999	113
123.5	1.5	132	145	140	999	133	999	134

Means								
124.92	2.646	118.4	125.4	129.1	132.333	133.6	135.875	132.3
S.D.								
15.708	1.846	16.919	25.997	26.568	26.944	23.477	25.464	24.784
N								
10	10	10	10	10	9	10	8	10

Systolic	B.P.	Morning Measurements		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
132.8	3.5	124	136	137	143	145	143	142
122	1.58	122	127	124	148	147	147	146
112.75	4.66	95	115	116	120	111	114	109
145.5	4.33	133	144	141	153	147	147	141
100.5	1.66	101	109	123	114	109	122	115
149	0	999	196	192	196	195	192	177
126.5	1.5	115	135	133	135	134	136	141
119.25	4.82	119	117	133	124	132	122	126
114.25	1.09	110	114	127	135	131	999	129
123.5	5.17	127	139	137	138	144	146	136

Means								
124.605	2.831	116.222	133.2	136.3	140.6	139.5	141	136.2
S.D.								
14.787	1.863	12.357	25.148	21.013	22.999	23.908	22.853	18.814
N								
10	10	9	10	10	10	10	9	10

Systolic B.P.	Afternoon	Placebo						
137.8	125	146	147	138	136	121	118	123
124.75	122	136	126	133	132	999	128	999
107.5	118	117	119	123	115	101	105	111
132.75	999	145	141	136	136	124	126	999
99.75	103	99	103	101	102	99	91	93
147	999	144	148	139	144	134	135	999
126	137	132	999	131	139	130	119	126
115	999	143	121	110	122	127	115	999
111.75	999	119	116	113	113	111	105	96
116.75	129	129	121	121	119	113	129	119
Means								
121.905	122.333	131	126.889	124.5	125.8	117.778	117.1	111.333
S.D.								
14.532	11.483	15.377	15.293	13.117	13.579	12.498	13.511	14.01
N								
10	6	10	9	10	10	9	10	6
Systolic B.P. Afternoon 600mg/70kg 2-PAM Cl								
134.75	141	148	144	153	145	143	144	999
133	999	128	134	121	132	117	122	127
116.5	999	111	116	118	117	105	132	999
133.75	134	154	144	141	138	143	136	146
98	999	105	109	109	114	103	109	999
146.5	147	999	138	140	142	136	135	999
122	999	128	124	127	127	118	114	111
114.75	119	134	126	119	119	113	121	999
108.75	119	123	121	126	118	114	107	114
134.25	134	131	129	138	136	142	128	999
Means								
124.225	132.333	129.111	128.5	129.2	128.8	123.4	124.8	124.5
S.D.								
14.745	11.413	15.624	11.645	13.415	11.341	15.967	12.318	15.927
N								
10	6	9	10	10	10	10	10	4
Systolic B.P. Afternoon 1200mg/70kg 2-PAM Cl								
146	999	149	146	143	138	138	143	149
136.25	127	138	141	133	133	116	122	999
110.5	111	123	124	119	116	129	115	114
133.5	999	137	139	140	141	138	107	999
100.25	128	999	126	124	121	112	91	111
146.25	139	153	152	147	147	145	144	145
120	999	129	134	133	132	117	108	999
120.5	130	144	118	123	123	112	115	126
105	116	128	128	126	127	111	108	999
127.75	136	136	141	141	143	999	123	121
Means								
124.6	126.714	137.444	134.9	132.9	132.1	124.222	117.6	127.667
S.D.								
16.212	10.095	9.939	10.744	9.632	10.257	13.358	16.358	15.921
N								
10	7	9	10	10	10	9	10	6

Systolic	B.P.	Afternoon	2mg/70kg	Atropine				
138.75	999	132	134	138	132	128	108	999
140	123	132	127	126	129	112	112	127
116.75	999	113	110	115	107	109	100	999
133.5	119	121	121	130	121	124	124	126
101	999	95	93	99	90	999	99	999
141.75	139	141	147	141	151	135	141	130
114	125	127	126	134	130	106	121	999
118.3	103	113	119	112	121	103	113	134
108.25	101	118	109	117	121	99	112	102
123	117	116	123	121	121	118	115	999

Means

123.53 118.143 120.8 120.9 123.3 122.3 114.889 114.5 123.8

S.D.

14.298 13.108 12.977 14.768 13.03 16.007 12.17 12.213 12.578

N

10 7 10 10 10 10 9 10 5

Systolic	B.P.	Afternoon	4mg/70kg	Atropine				
130	110	124	133	140	126	124	120	142
126	106	123	128	127	126	125	106	999
109	99	113	104	106	102	103	107	117
128.75	999	131	125	131	127	119	132	999
108.5	105	97	101	97	97	104	103	102
149.75	999	153	144	141	138	139	142	999
118.7	112	114	115	114	111	108	102	119
123.5	105	110	128	116	113	114	106	122
102.5	124	111	105	115	112	99	107	999
132.25	125	127	128	128	138	128	130	112

Means

122.895 110.75 120.3 121.1 121.5 119 116.3 115.5 119

S.D.

13.894 9.316 15.195 14.208 14.355 14.166 12.893 14.409 13.266

N

10 8 10 10 10 10 10 10 6

Systolic	B.P.	Afternoon	2mg/70kg	Atropine	& 600mg/70kg	2-PAM	Cl	
144.25	144	139	139	139	137	120	116	999
137.5	120	128	125	119	122	126	106	123
115.25	999	115	119	109	114	112	110	999
142.25	156	138	136	152	143	134	129	112
102.5	114	101	107	108	107	97	100	145
145.75	999	147	139	151	133	133	135	999
123.25	130	137	127	131	132	112	120	112
117.5	114	118	131	124	117	110	114	999
117.5	115	121	120	125	126	114	109	108
118.5	135	127	118	129	123	127	117	114

Means

126.425 128.5 127.1 126.1 128.7 125.4 118.5 115.6 119

S.D.

14.884 15.657 13.755 10.408 15.268 11.067 11.645 10.49 13.682

N

10 8 10 10 10 10 10 10 6

Systolic	B.P.	Afternoon	4mg/70kg	Atropine	& 600mg/70kg	2-PAM	Cl	
141.75	999	132	139	136	127	125	138	999
118.5	124	130	126	119	123	116	117	120
126	116	117	114	114	111	102	105	109
134.75	135	137	131	132	127	123	121	999
105	111	113	117	114	112	111	999	86
151.25	149	999	147	141	144	131	141	999
121.5	133	999	126	134	123	109	113	133
115.75	126	128	122	116	118	116	100	999
119.25	127	127	121	129	127	120	115	107
125	999	132	134	132	132	125	112	116

Means								
125.875	127.625	127	127.7	126.7	124.4	117.8	118	111.833
S.D.								
13.463	11.759	8.071	10.199	10.012	9.663	8.753	13.702	15.69
N								
10	8	8	10	10	10	10	9	6

Systolic	B.P.	Afternoon	2mg/70kg	Atropine	& 1200mg/70kg	2-PAM	Cl	
141.5	128	136	136	141	131	104	131	126
133.75	120	143	137	136	135	121	116	999
115	115	128	127	125	121	109	112	102
137.25	131	131	133	138	137	999	125	118
105	999	114	115	113	111	100	89	999
151.75	999	999	139	133	129	999	999	150
121.75	124	131	132	125	131	122	122	999
114	120	129	119	119	117	110	110	103
105.7	999	116	119	121	119	116	104	999
123.5	148	135	131	136	131	123	127	999

Means								
124.92	126.571	129.222	128.8	128.7	126.2	113.125	115.111	119.8
S.D.								
15.708	10.861	9.244	8.443	9.37	8.6	8.692	13.138	19.703
N								
10	7	9	10	10	10	8	9	5

Systolic	B.P.	Afternoon	4mg/70kg	Atropine	& 1200mg/70kg	2-PAM	Cl	
132.8	141	152	142	143	137	136	121	145
122	122	144	144	139	144	125	113	115
112.75	109	112	111	111	109	113	105	999
145.5	124	137	141	132	134	129	125	126
100.5	118	116	116	121	116	110	97	999
149	171	151	144	137	144	144	147	158
126.5	133	146	141	144	145	119	106	999
119.25	116	117	122	112	128	114	113	105
114.25	999	115	119	116	111	111	109	999
123.5	143	132	131	129	128	139	121	999

Means								
124.605	130.778	132.2	131.1	128.4	129.6	124	115.7	129.8
S.D.								
14.787	18.893	15.971	12.948	12.633	13.689	12.499	13.905	21.649
N								
10	9	10	10	10	10	10	10	5

Diastolic B.P.	Morning	Placebo						
69.8	1.92	70	68	88	70	75	84	77
65.75	5.45	67	75	999	71	63	72	82
75.5	4.15	63	66	69	78	76	81	74
86.5	3.5	81	72	67	81	96	85	83
72.5	4.03	59	62	59	76	76	72	76
82.5	6.5	73	81	72	77	68	60	58
84	2	85	75	77	999	82	81	999
81	3.67	78	73	58	70	81	69	76
82	.71	72	77	78	94	83	82	93
87.5	2.5	80	85	71	81	84	82	76

Means								
78.705	3.443	72.8	73.4	71	77.556	78.4	76.8	77.222
S.D.								
7.398	1.733	8.324	6.883	9.407	7.535	9.131	8.149	9.284
N								
10	10	10	10	9	9	10	10	9

Diastolic B.P.	Morning	600mg/70kg	2-PAM Cl					
73.25	5.8	64	68	83	79	86	78	74
73	1.87	64	54	64	67	63	67	66
71	1.87	63	63	59	74	72	69	72
79.25	7.5	77	57	75	81	82	86	85
72.75	4.14	66	66	74	83	79	93	84
67.75	7.69	64	70	83	81	67	67	67
82.5	.87	71	75	77	999	999	999	999
67.25	1.48	67	70	60	68	67	68	72
78.5	2.5	67	70	80	92	91	81	88
89.75	2.59	74	80	85	83	81	83	77

Means								
75.5	3.631	67.7	67.3	74	78.667	76.444	76.889	76.111
S.D.								
7.011	2.522	4.762	7.79	9.718	7.89	9.619	9.584	7.96
N								
10	10	10	10	10	9	9	9	9

Diastolic B.P.	Morning	1200mg/70kg	2-PAM Cl					
76.25	3.56	58	999	74	76	77	86	83
79	6.16	75	75	73	81	83	76	80
72.5	3.35	68	79	66	85	84	84	76
78.25	3.27	84	83	77	75	85	93	78
71.75	1.48	69	67	80	90	95	94	95
62.25	6.61	79	79	88	74	71	74	66
76.5	2.2	61	70	75	96	97	98	98
72.5	6.06	61	71	78	91	89	83	78
72.5	2.29	76	72	78	84	87	88	87
85	4.74	86	87	85	91	88	91	85

Means								
74.65	3.972	71.7	75.889	77.4	84.3	85.6	86.7	82.6
S.D.								
5.972	1.823	9.866	6.585	6.186	7.689	7.706	7.732	9.336
N								
10	10	10	9	10	10	10	10	10

Diastolic B.P.	Morning	2mg/70kg Atropine						
60.5	6.58	74	70	74	83	86	86	81
77.25	4.92	59	65	999	87	87	85	89
75	4.18	75	73	77	101	85	89	82
78.75	3.34	77	79	77	91	90	92	97
78	.71	71	70	68	75	70	79	80
75.25	1.3	80	82	93	101	88	87	91
84	8	75	76	71	88	87	89	90
72.75	4.44	59	75	87	71	85	77	78
72.5	2.69	71	75	87	89	91	90	91
90.7	1.25	91	100	92	95	96	95	92

Means								
76.47	3.741	73.2	76.5	80.667	88.1	86.5	86.9	87.1
S.D.								
7.857	2.378	9.414	9.56	9.26	9.893	6.687	5.527	6.332
N								
10	10	10	10	9	10	10	10	10

Diastolic B.P.	Morning	4mg/70kg Atropine						
76.75	1.1	72	73	78	86	81	79	91
66.25	3.49	65	74	73	82	84	86	81
75	2.55	69	81	83	82	85	78	74
82.75	2.59	80	80	64	96	98	98	95
85.75	3.34	70	77	79	79	82	91	82
78.5	2.96	99	100	110	83	81	75	79
84	2.4	70	66	77	88	85	88	87
72	9.82	94	999	999	999	999	999	999
73.5	.86	80	96	104	105	78	95	82
83.5	6.69	89	92	90	109	106	98	96

Means								
77.8	3.58	78.8	82.111	84.222	90	86.667	87.556	85.222
S.D.								
6.268	2.709	11.708	11.461	14.763	10.84	9.192	8.734	7.513
N								
10	10	10	9	9	9	9	9	9

Diastolic B.P.	Morning	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl						
79	3.16	81	78	75	92	91	91	84
76	3.54	56	64	71	82	86	90	89
76	1.87	67	77	78	112	91	91	89
76.75	4.6	73	85	77	93	91	103	88
74.5	3.04	61	75	83	87	85	999	999
89.75	2.17	92	95	90	84	91	80	84
82	2.55	63	64	70	97	102	104	104
72.25	6.46	69	86	91	91	92	79	87
84.75	.83	67	69	80	999	999	999	999
85.5	4.92	80	90	86	100	101	105	98

Means								
79.65	3.314	70.9	78.3	80.1	93.111	92.222	92.875	90.375
S.D.								
5.623	1.647	10.806	10.688	7.34	9.144	5.805	10.329	7.029
N								
10	10	10	10	10	9	9	8	8

Diastolic B.P. Morning			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl					
81	2.83	80	75	68	85	85	85	87
64	3.2	61	70	74	79	80	80	85
83.75	.43	70	81	88	93	84	95	91
76.25	4.21	77	72	94	97	92	98	101
77.25	2.49	71	75	79	91	93	91	90
72	5.96	89	99	109	97	105	91	91
84.25	3.11	89	82	78	97	92	99	105
74	3.39	76	81	77	91	91	85	99
73.75	5.89	81	83	94	101	81	104	100
90.5	4.98	86	101	105	104	107	101	102

Means								
77.675	3.649	78	81.9	86.6	93.5	91	92.9	95.1
S.D.								
7.498	1.679	8.981	10.514	13.664	7.442	9.214	7.852	7.047
N								
10	10	10	10	10	10	10	10	10

Diastolic B.P. Morning			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl					
76.75	1.79	69	71	69	91	80	87	81
72	1.58	62	63	73	91	97	87	85
79.25	1.92	66	64	74	89	85	84	91
75.75	4.21	74	73	75	88	81	69	88
81.5	4.92	62	70	70	87	84	87	88
76.25	6.87	81	97	89	116	121	126	121
78.25	2.28	70	72	79	98	104	104	103
69.25	1.92	60	66	61	87	88	82	78
77.3	6.34	89	96	101	103	100	999	94
92.75	2.05	84	94	90	999	103	999	103

Means								
77.905	3.388	71.7	76.6	78.1	94.444	94.3	90.75	93.2
S.D.								
6.272	2.028	10.056	13.583	11.921	9.723	13.064	17.136	12.787
N								
10	10	10	10	10	9	10	8	10

Diastolic B.P. Morning			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl					
69.3	8.7	64	96	81	101	97	95	78
65	1.87	68	85	81	103	104	102	100
70.25	3.56	78	85	80	98	89	85	78
73.5	4.15	86	90	94	117	110	108	113
76	1.87	78	75	87	92	87	96	94
84	0	999	94	103	123	116	129	111
85.25	2.59	75	82	84	103	104	104	106
69.75	2.17	75	71	88	98	105	102	100
80	5.52	77	89	97	109	94	999	102
87	5.87	88	109	102	114	107	116	119

Means								
76.005	3.63	76.556	87.6	89.7	105.8	101.3	104.111	100.1
S.D.								
7.68	2.52	7.585	10.834	8.744	9.716	9.31	12.742	13.723
N								
10	10	9	10	10	10	10	9	10

Diastolic B.P. Afternoon			Placebo					
69.8	92	69	71	69	70	71	79	74
65.75	68	71	54	61	57	999	66	999
75.5	69	70	60	71	69	62	77	74
86.5	999	86	74	86	81	79	80	999
72.5	71	70	71	71	71	66	74	75
82.5	999	78	71	87	80	80	84	999
84	59	82	999	81	93	74	71	71
81	999	71	79	80	86	73	75	999
82	999	75	74	85	72	70	76	66
87.5	73	81	76	85	82	67	83	84

Means								
78.705	72	75.3	70	77.6	76.1	71.333	76.5	74
S.D.								
7.398	10.918	6.075	7.969	8.959	10.29	5.916	5.442	5.899
N								
10	6	10	9	10	10	9	10	6

Diastolic B.P. Afternoon			600mg/70kg 2-PAM Cl					
73.25	86	72	75	81	72	68	74	999
73	999	67	59	59	56	58	76	73
71	999	71	79	74	72	76	75	999
79.25	81	82	82	83	71	87	73	77
72.75	999	79	81	81	86	80	83	999
67.75	71	999	82	77	71	63	77	999
82.5	999	75	70	74	85	83	84	80
67.25	63	72	81	71	73	65	65	999
78.5	70	82	81	78	78	79	74	74
89.75	77	86	88	92	87	75	70	999

Means								
75.5	74.667	76.222	77.8	77	75.1	73.4	75.1	76
S.D.								
7.011	8.311	6.32	8.121	8.641	9.362	9.466	5.587	3.162
N								
10	6	9	10	10	10	10	10	4

Diastolic B.P. Afternoon			1200mg/70kg 2-PAM Cl					
76.25	999	96	86	85	84	77	80	74
79	81	66	68	67	61	48	77	999
72.5	76	65	70	75	68	72	67	66
78.25	999	87	75	72	83	79	71	999
71.75	87	999	82	85	83	69	71	76
62.25	78	51	57	62	58	69	62	75
76.5	999	80	84	88	81	85	81	999
72.5	67	71	90	78	79	70	51	65
72.5	70	71	74	86	76	72	79	999
85	82	83	86	89	85	999	76	86

Means								
74.65	77.286	74.444	77.2	78.7	75.8	71.222	71.5	73.667
S.D.								
5.972	6.969	13.51	10.261	9.429	9.942	10.22	9.431	7.659
N								
10	7	9	10	10	10	9	10	6

Diastolic B.P. Afternoon			2mg/70kg Atropine					
60.5	999	69	67	72	73	71	70	999
77.25	78	69	68	66	59	54	67	73
75	999	77	81	82	76	79	66	999
78.75	84	82	91	91	89	84	69	70
78	999	79	73	78	77	999	73	999
75.25	93	85	79	85	77	70	75	73
84	58	81	82	87	76	75	67	999
72.75	70	81	79	76	76	75	67	64
72.5	69	62	77	74	79	67	53	76
90.7	81	85	92	92	87	77	85	999

Means								
76.47	76.143	77	78.9	80.3	76.9	72.444	69.2	71.2
S.D.								
7.857	11.481	7.76	8.373	8.551	8.103	8.575	8.066	4.55
N								
10	7	10	10	10	10	9	10	5

Diastolic B.P. Afternoon			4mg/70kg Atropine					
76.75	70	85	77	89	73	74	70	75
66.25	81	83	79	82	84	80	71	999
75	65	71	79	74	76	67	57	62
82.75	999	88	88	91	87	82	75	999
85.75	81	78	79	82	79	80	72	73
78.5	999	93	91	95	89	90	75	999
84	79	88	84	81	84	79	59	77
72	72	81	84	86	79	71	66	73
73.5	82	84	79	83	82	63	60	999
83.5	69	99	96	95	98	91	79	89

Means								
77.8	74.875	85	83.6	85.8	83.1	77.7	68.4	74.833
S.D.								
6.268	6.621	7.775	6.293	6.713	7.156	9.117	7.575	8.681
N								
10	8	10	10	10	10	10	10	6

Diastolic B.P. Afternoon			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl					
79	84	94	86	80	82	64	68	999
76	85	84	81	76	73	74	69	76
76	999	82	83	81	84	70	66	999
76.75	93	94	91	71	73	95	73	66
74.5	83	65	76	75	79	69	69	75
89.75	999	88	85	95	80	67	44	999
82	88	89	78	85	77	69	64	85
72.25	72	86	84	82	85	67	59	999
84.75	79	93	96	98	101	85	68	85
85.5	92	88	81	87	89	84	79	79

Means								
79.65	84.5	86.3	84.1	83	82.3	74.4	65.9	77.667
S.D.								
5.623	6.866	8.525	5.934	8.563	8.314	10.135	9.315	7.146
N								
10	8	10	10	10	10	10	10	6

Diastolic B.P. Afternoon			4mg/70kg	Atropine	& 600mg/70kg	2-PAM Cl		
81	999	86	84	93	87	78	68	999
64	71	85	80	91	77	60	67	63
83.75	78	89	85	83	69	74	66	67
76.25	93	97	94	97	98	70	73	999
77.25	79	84	86	85	82	79	999	70
72	89	999	86	79	91	71	69	999
84.25	91	999	97	106	99	82	74	78
74	85	83	95	89	93	69	69	999
73.75	97	101	96	99	101	89	79	78
90.5	999	97	99	92	109	81	66	78

Means								
77.675	85.375	90.25	90.2	91.4	90.6	75.3	70.111	72.333
S.D.								
7.498	8.782	7.025	6.663	8.003	12.094	8.22	4.372	6.593
N								
10	8	8	10	10	10	10	9	6

Diastolic B.P. Afternoon			2mg/70kg	Atropine	& 1200mg/70kg	2-PAM Cl		
76.75	76	77	76	76	68	58	58	83
72	56	72	76	52	66	71	63	999
79.25	82	85	85	87	81	81	74	55
75.75	89	93	95	96	100	999	66	74
81.5	999	83	82	77	79	72	67	999
76.25	999	999	62	47	55	999	999	61
78.25	77	92	89	95	92	84	70	999
69.25	76	87	95	75	84	75	64	66
77.3	999	86	91	83	92	85	72	999
92.75	101	101	98	102	101	83	79	999

Means								
77.905	79.571	86.222	84.9	79	81.8	76.125	68.111	67.8
S.D.								
6.272	13.794	8.643	11.16	18.062	15.201	9.141	6.353	10.986
N								
10	7	9	10	10	10	8	9	5

Diastolic B.P. Afternoon			4mg/70kg	Atropine	& 1200mg/70kg	2-PAM Cl		
69.3	79	84	80	80	82	75	69	60
65	78	93	90	94	90	61	72	67
70.25	73	81	80	83	81	74	62	999
73.5	100	98	98	96	108	84	78	77
76	83	89	85	87	89	78	65	999
84	111	104	99	87	91	96	73	84
85.25	97	108	103	104	99	83	80	999
69.75	84	82	94	83	82	79	79	63
80	999	88	96	91	86	86	63	999
87	100	97	102	99	102	95	80	999

Means								
76.005	89.444	92.4	92.7	90.4	91	81.1	72.1	70.2
S.D.								
7.68	12.875	9.252	8.577	7.777	9.226	10.311	7.094	10.035
N								
10	9	10	10	10	10	10	10	5

Pain Rating (0-4)		Placebo					
0	999	0	0	0	0	0	0
0	0	0	999	0	999	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	999	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	0	0	999
0	1	0	0	999	0	0	0
0	0	999	0	0	0	0	0

Means							
0	.111	0	0	0	0	0	0
S.D.							
0	.333	0	0	0	0	0	0
N							
10	9	9	9	6	8	10	6

Pain Rating (0-4)		600mg/70kg 2-PAM Cl					
0	0	5	5	3	2	0	999
0	0	0	1	999	1	0	0
0	1	2	2	999	3	0	999
0	1	1	1.5	2	1	999	0
0	0	0	0	999	.5	0	999
0	2	1	1	1	0	0	0
0	1	1	1	999	.5	0	0
0	1	1	0	1	1	0	999
0	2	2	2	2	1	0	0
0	.25	.25	.25	.25	.25	0	999

Means							
0	.825	1.325	1.375	1.542	1.025	0	0
S.D.							
0	.764	1.472	1.468	.98	.885	0	0
N							
10	10	10	10	6	10	9	5

Pain Rating (0-4)		1200mg/70kg 2-PAM Cl					
0	4	999	3.5	999	5	1	.5
0	3	3	3	1	1	0	999
0	1	1	1	2	2	999	.5
0	0	.5	1	999	1	0	999
0	1	1	2	2	0	0	0
0	1	1	1.5	1	1	0	0
0	.5	.5	1	999	.5	0	999
0	2	1	1	1	1	0	0
0	3	3	3	3	2	0	999
0	2	1	1	2	999	0	0

Means							
0	1.75	1.333	1.8	1.714	1.5	.111	.167
S.D.							
0	1.275	.968	1.006	.756	1.458	.333	.258
N							
10	10	9	10	7	9	9	6

Pain Rating (0-4)		2mg/70kg Atropine					
0	.5	.5	.5	999	0	0	999
0	.5	0	999	0	0	0	0
0	0	0	0	999	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	999	0	999
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	999

Means

0	.1	.05	.056	0	0	0	0
S.D.							
0	.211	.158	.167	0	0	0	0
N							
10	10	10	9	7	9	10	5

Pain Rating (0-4)		4mg/70kg Atropine					
0	2	2.5	2	0	0	0	.5
0	0	0	0	0	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	0	0	999
0	.5	1	1	1	0	0	0
0	0	999	999	0	1	0	0
0	1	1	2	0	0	0	999
0	0	0	0	0	0	0	0

Means

0	.35	.5	.556	.125	.1	0	.083
S.D.							
0	.669	.866	.882	.354	.316	0	.204
N							
10	10	9	9	8	10	10	6

Pain Rating (0-4)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl					
0	2	2	3	2	3	0	999
0	1	1.5	3	3.5	1	0	0
0	1	1	2	999	2	1	999
0	2	2	2.5	3	1	0	0
0	0	0	0	0	0	0	0
0	1	1	1	999	1	0	999
0	0	1	1.5	1	0	0	0
0	1	1	1	1	1	0	999
0	1	2	2	2	1	0	0
0	.75	.75	.75	1	1	0	0

Means

0	.975	1.225	1.675	1.688	1.1	.1	0
S.D.							
0	.671	.65	1	1.163	.876	.316	0
N							
10	10	10	10	8	10	10	6

Pain Rating (0-4)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl					
0	1	1.5	3	999	1	0	999
0	1	3.5	4	3.5	2	0	0
0	1	1	1	1	999	.5	0
0	.5	1.25	2	2	0	0	999
0	0	0	0	1	.5	999	0
0	0	1	.5	1	0	0	999
0	0	.5	1.5	2	1	0	0
0	1	1	1	2	1	0	999
0	.5	.5	.5	2	1	0	0
0	0	.5	.5	999	.5	0	0

Means							
0	.5	1.075	1.4	1.813	.778	.056	0
S.D.							
0	.471	.958	1.265	.843	.618	.167	0
N							
10	10	10	10	8	9	9	6

Pain Rating (0-4)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl					
0	0	1	1.5	3	2	.5	.75
0	3	2	2.5	3	1	1.5	999
0	1	1	1	1	1	.1	.09
0	0	.5	2.5	3	999	.3	.4
0	0	0	0	999	0	0	999
0	1	1	1	999	999	999	0
0	0	1	2	1	.5	0	999
0	1	0	1	1	1	0	0
0	1	2	2	999	1	0	999
0	.5	.5	.5	2	.5	0	999

Means							
0	.75	.9	1.4	2	.875	.267	.248
S.D.							
0	.92	.699	.843	1	.582	.495	.325
N							
10	10	10	10	7	8	9	5

Pain Rating (0-4)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl					
0	4	999	4	4	3	0	0
0	2	4	4	4	3	0	0
0	0	1	3	2	2	1	999
0	0	1	2	2	1	0	1E-03
0	0	0	1	2	1	0	999
0	999	1	1	2	.5	0	0
0	0	1	1	2	1.5	.01	999
0	1	1	1	1.5	1	.05	0
0	1	2	2	999	1	0	999
0	1	1	1.25	1.25	0	0	999

Means							
0	1	1.333	2.025	2.306	1.4	.106	0
S.D.							
0	1.323	1.118	1.227	.998	.994	.315	0
N							
10	9	9	10	9	10	10	5

High Rating (0-100)		Placebo					
0	999	20	10	0	0	0	0
0	0	0	999	0	999	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	999	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	0	0	999
0	0	1	0	0	0	0	0
0	0	0	0	999	0	0	999
0	0	0	0	999	0	0	0
0	0	999	0	0	0	0	0
Means							
0	0	2.333	1.111	0	0	0	0
S.D.							
0	0	6.633	3.333	0	0	0	0
N							
10	9	9	9	6	8	10	6

High Rating (0-100)		600mg/70kg 2-PAM Cl					
0	0	0	0	0	0	0	999
0	20	20	10	999	0	0	0
0	0	0	0	999	0	0	999
0	0	1	0	0	0	999	0
0	0	0	0	999	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	999	0	0	0
0	0	0	0	0	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	999
Means							
0	2	2.1	1	0	0	0	0
S.D.							
0	6.325	6.297	3.162	0	0	0	0
N							
10	10	10	10	6	10	9	5

High Rating (0-100)		1200mg/70kg 2-PAM Cl					
0	25	999	20	999	5	0	0
0	30	30	30	20	10	0	999
0	0	0	0	0	0	999	0
0	0	0	0	999	0	0	999
0	15	10	15	10	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	999	0	0	999
0	0	0	0	0	0	0	0
0	0	0	0	0	3	0	999
0	30	10	10	0	999	0	0
Means							
0	10	5.556	7.5	4.429	2	0	0
S.D.							
0	13.54	10.138	10.865	7.786	3.5	0	0
N							
10	10	9	10	7	9	9	6

	High Rating (0-100)		2mg/70kg Atropine				
0	20	30	35	999	0	0	999
0	10	0	999	0	0	0	0
0	1	3	5	999	0	0	999
0	0	0	0	.1	0	0	0
0	0	15	10	999	999	0	999
0	10	10	15	10	0	0	0
0	5	5	5	0	0	0	999
0	5	8	8	8	0	0	0
0	0	0	5	10	0	0	0
0	5	10	10	10	5	0	999
Means							
0	5.6	8.1	10.333	5.443	.556	0	0
S.D.							
0	6.346	9.231	10.173	5.109	1.667	0	0
N							
10	10	10	9	7	9	10	5

	High Rating (0-100)		4mg/70kg Atropine				
0	30	60	75	80	30	0	0
0	40	50	60	40	30	0	999
0	1	5	8	5	0	0	0
0	0	2.3	4	999	0	0	999
0	0	10	15	10	0	0	0
0	10	20	20	999	10	0	999
0	0	20	20	8	0	0	0
0	3	999	999	12	0	0	0
0	5	6	10	15	0	0	999
0	5	5	5	5	5	0	0
Means							
0	9.4	19.811	24.111	21.875	7.5	0	0
S.D.							
0	14.049	21.092	25.551	26.063	12.304	0	0
N							
10	10	9	9	8	10	10	6

	High Rating (0-100)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
0	15	25	30	10	10	0	999
0	15	15	15	30	20	0	0
0	0	3	5	999	0	0	999
0	0	4	5	5	0	0	0
0	0	5	10	20	0	0	0
0	15	10	15	999	0	0	999
0	0	10	15	0	0	0	0
0	0	1	1	2	0	0	999
0	0	5	10	15	5	0	0
0	0	0	0	0	0	0	0
Means							
0	4.5	7.8	10.6	10.25	3.5	0	0
S.D.							
0	7.246	7.584	8.834	10.78	6.687	0	0
N							
10	10	10	10	8	10	10	6

High Rating (0-100)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl					
0	30	35	50	999	15	0	999
0	5	20	20	30	20	0	0
0	0	4	4	4	999	0	0
0	0	1	2	1	0	0	999
0	5	10	10	30	5	999	0
0	15	20	20	15	0	0	999
0	0	15	20	15	5	0	0
0	1	1	1	5	4	1	999
0	0	5	10	20	10	0	0
0	10	10	10	999	10	0	0
Means							
0	6.6	12.1	14.7	15	7.667	.111	0
S.D.							
0	9.663	10.692	14.376	11.288	6.727	.333	0
N							
10	10	10	10	8	9	9	6

High Rating (0-100)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl					
0	30	45	40	25	.5	0	0
0	50	15	15	20	20	1	999
0	0	0	0	1	0	0	0
0	0	1	8	0	999	0	0
0	0	5	5	999	0	0	999
0	0	20	25	999	999	999	0
0	10	10	10	5	0	0	999
0	1	0	1	1	.5	0	5E-03
0	0	10	10	999	10	0	999
0	10	10	10	0	10	0	999
Means							
0	10.1	11.6	12.4	7.429	5.125	.111	1E-03
S.D.							
0	16.934	13.459	12.03	10.533	7.468	.333	2E-03
N							
10	10	10	10	7	8	9	5

High Rating (0-100)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl					
0	87	999	80	60	45	0	0
0	20	50	50	70	50	0	0
0	0	4	6	6	3	0	999
0	0	1	3	5	1	0	0
0	5	10	10	30	5	0	999
0	999	20	25	30	15	0	0
0	5	10	10	10	0	0	999
0	1	1	1	1.5	1.5	1	0
0	5	10	10	999	5	0	999
0	10	10	10	10	0	0	999
Means							
0	14.778	12.889	20.5	24.722	12.55	.1	0
S.D.							
0	27.793	15.095	25.317	25.156	18.966	.316	0
N							
10	9	9	10	9	10	10	5

DVA High Contrast # of Letters			Placebo		
59	58	59	59	60	60
63	60	60	60	64	999
59	59	59	58	62	62
62	60	62	60	64	999
65	64	65	58	68	68
64	65	65	65	65	999
63	64	65	62	66	65
69	68	68	68	68	999
69	68	66	60	67	67
65	64	60	62	63	62
Means					
63.8	63	62.9	61.2	64.7	64
S.D.					
3.458	3.59	3.281	3.19	2.627	3.162
N					
10	10	10	10	10	6
DVA High Contrast # of Letters			600mg/70kg 2-PAM Cl		
59	58	57	57	60	999
63	62	64	60	64	63
61	61	62	61	60	999
60	60	60	56	62	64
67	67	70	70	70	999
61	60	62	60	65	64
61	999	65	63	63	64
68	66	68	66	69	999
70	68	66	62	69	69
62	62	62	62	62	999
Means					
63.2	62.667	63.6	61.7	64.4	64.8
S.D.					
3.765	3.5	3.836	4.084	3.748	2.387
N					
10	9	10	10	10	5
DVA High Contrast # of Letters			1200mg/70kg 2-PAM Cl		
58	59	58	59	60	60
64	64	64	65	64	999
60	60	60	60	65	63
64	63	62	61	65	999
68	65	67	68	69	65
63	63	63	63	65	999
63	64	67	64	66	999
67	68	67	68	64	69
68	69	65	61	69	999
61	58	60	58	62	63
Means					
63.6	63.3	63.3	62.7	64.9	64
S.D.					
3.373	3.592	3.268	3.529	2.767	3.317
N					
10	10	10	10	10	5

DVA High Contrast # of Letters			2mg/70kg Atropine		
59	60	60	60	59	999
61	60	60	60	64	64
65	59	58	62	62	999
62	59	63	63	65	65
70	64	69	69	70	999
65	65	65	65	65	65
65	65	68	65	64	999
67	64	67	67	69	69
68	63	69	65	67	70
63	60	63	62	63	999
Means					
64.5	61.9	64.2	63.8	64.8	66.6
S.D.					
3.342	2.514	4.022	2.936	3.259	2.702
N					
10	10	10	10	10	5

DVA High Contrast # of Letters			4mg/70kg Atropine		
59	57	57	56	61	61
64	62	60	60	64	999
60	58	60	59	62	63
61	58	54	57	63	999
65	60	65	60	69	65
65	60	60	60	65	999
61	59	61	59	65	66
67	57	64	65	64	65
68	65	58	64	68	999
61	45	25	24	62	63
Means					
63.1	58.1	56.4	56.4	64.3	63.833
S.D.					
3.107	5.216	11.481	11.711	2.584	1.835
N					
10	10	10	10	10	6

DVA High Contrast # of Letters			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
59	58	59	58	60	999
61	63	60	61	63	65
63	63	64	59	65	999
60	59	58	58	62	61
67	60	60	60	65	64
64	65	65	64	67	999
65	62	63	65	65	65
67	66	66	65	65	999
67	64	68	65	67	68
62	61	60	60	64	62
Means					
63.5	62.1	62.3	61.5	64.3	64.167
S.D.					
2.991	2.601	3.368	2.953	2.163	2.483
N					
10	10	10	10	10	6

DVA High Contrast # of Letters			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
59	59	60	59	60	999
63	60	57	57	64	64
63	59	56	55	62	61
60	59	60	59	65	999
64	60	60	60	65	68
64	60	59	59	65	999
67	62	62	62	65	65
68	58	60	67	69	999
68	59	58	55	69	69
62	56	24	23	64	62

Means					
63.8	59.2	55.6	55.6	64.8	64.833
S.D.					
3.12	1.549	11.237	11.974	2.741	3.189
N					
10	10	10	10	10	6

DVA High Contrast # of Letters			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
59	59	59	58	61	61
65	65	65	65	64	999
61	60	60	60	62	60
64	62	60	61	65	64
69	65	64	65	68	999
65	60	65	64	65	65
66	64	65	60	64	999
66	65	64	68	68	68
67	62	65	60	70	999
60	60	60	59	63	999

Means					
64.2	62.2	62.7	62	65	63.6
S.D.					
3.225	2.394	2.584	3.266	2.867	3.209
N					
10	10	10	10	10	5

DVA High Contrast # of Letters			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
58	56	56	57	60	60
61	57	61	60	64	64
61	60	49	54	62	999
62	62	60	60	62	57
65	60	60	60	68	999
65	59	60	59	65	65
64	63	64	60	65	999
66	65	65	65	64	68
68	54	58	54	67	999
60	26	20	20	62	999

Means					
63	56.2	55.3	54.9	63.9	62.8
S.D.					
3.091	11.114	13.174	12.679	2.47	4.324
N					
10	10	10	10	10	5

DVA High Contrast Log Mar		Placebo			
-.08	-.06	-.08	-.08	-.1	-.1
-.16	-.1	-.1	-.1	-.18	999
-.08	-.08	-.08	-.06	-.14	-.14
-.14	-.1	-.14	-.1	-.18	999
-.2	-.18	-.2	-.06	-.26	-.26
-.18	-.2	-.2	-.2	-.2	999
-.16	-.18	-.2	-.14	-.22	-.2
-.28	-.26	-.26	-.26	-.26	999
-.28	-.26	-.22	-.1	-.24	-.24
-.2	-.18	-.1	-.14	-.16	-.14
Means					
-.176	-.16	-.158	-.124	-.194	-.18
S.D.					
N					
10	10	10	10	10	6
DVA High Contrast Log Mar		600mg/70kg 2-PAM Cl			
-.08	-.06	-.04	-.04	-.1	999
-.16	-.14	-.18	-.1	-.18	-.16
-.12	-.12	-.14	-.12	-.1	999
-.1	-.1	-.1	-.02	-.14	-.18
-.24	-.24	-.3	-.3	-.3	999
-.12	-.1	-.14	-.1	-.2	-.18
-.12	999	-.2	-.16	-.16	-.18
-.26	-.22	-.26	-.22	-.28	999
-.3	-.26	-.22	-.14	-.28	-.28
-.14	-.14	-.14	-.14	-.14	999
Means					
-.164	-.153	-.172	-.134	-.188	-.196
S.D.					
N					
10	9	10	10	10	5
DVA High Contrast Log Mar		1200mg/70kg 2-PAM Cl			
-.06	-.08	-.06	-.08	-.1	-.1
-.18	-.18	-.18	-.2	-.18	999
-.1	-.1	-.1	-.1	-.2	-.16
-.18	-.16	-.14	-.12	-.2	999
-.26	-.2	-.24	-.26	-.28	-.2
-.16	-.16	-.16	-.16	-.2	999
-.16	-.18	-.24	-.18	-.22	999
-.24	-.26	-.24	-.26	-.18	-.28
-.26	-.28	-.2	-.12	-.28	999
-.12	-.06	-.1	-.06	-.14	-.16
Means					
-.172	-.166	-.166	-.154	-.198	-.18
S.D.					
N					
10	10	10	10	10	5

DVA High Contrast Log Mar		2mg/70kg Atropine			
-.08	-.1	-.1	-.1	-.08	999
-.12	-.1	-.1	-.1	-.18	-.18
-.2	-.08	-.06	-.14	-.14	999
-.14	-.08	-.16	-.16	-.2	-.2
-.3	-.18	-.28	-.28	-.3	999
-.2	-.2	-.2	-.2	-.2	-.2
-.2	-.2	-.26	-.2	-.18	999
-.24	-.18	-.24	-.24	-.28	-.28
-.26	-.16	-.28	-.2	-.24	-.3
-.16	-.1	-.16	-.14	-.16	999

Means					
-.19	-.138	-.184	-.176	-.196	-.232
S.D.					
N					
10	10	10	10	10	5

DVA High Contrast Log Mar		4mg/70kg Atropine			
-.08	-.04	-.04	-.02	-.12	-.12
-.18	-.14	-.1	-.1	-.18	999
-.1	-.06	-.1	-.08	-.14	-.16
-.12	-.06	.02	-.04	-.16	999
-.2	-.1	-.2	-.1	-.28	-.2
-.2	-.1	-.1	-.1	-.2	999
-.12	-.08	-.12	-.08	-.2	-.22
-.24	-.04	-.18	-.2	-.18	-.2
-.26	-.2	-.06	-.18	-.26	999
-.12	.2	.6	.62	-.14	-.16

Means					
-.162	-.062	-.028	-.028	-.186	-.177
S.D.					
N					
10	10	10	10	10	6

DVA High Contrast Log Mar		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
-.08	-.06	-.08	-.06	-.1	999
-.12	-.16	-.1	-.12	-.16	-.2
-.16	-.16	-.18	-.08	-.2	999
-.1	-.08	-.06	-.06	-.14	-.12
-.24	-.1	-.1	-.1	-.2	-.18
-.18	-.2	-.2	-.18	-.24	999
-.2	-.14	-.16	-.2	-.2	-.2
-.24	-.22	-.22	-.2	-.2	999
-.24	-.18	-.26	-.2	-.24	-.26
-.14	-.12	-.1	-.1	-.18	-.14

Means					
-.17	-.142	-.146	-.13	-.186	-.183
S.D.					
N					
10	10	10	10	10	6

DVA High Contrast Log Mar		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
-.08	-.08	-.1	-.08	-.1	999
-.16	-.1	-.04	-.04	-.18	-.18
-.16	-.08	-.02	0	-.14	-.12
-.1	-.08	-.1	-.08	-.2	999
-.18	-.1	-.1	-.1	-.2	-.26
-.18	-.1	-.08	-.08	-.2	999
-.24	-.14	-.14	-.14	-.2	-.2
-.26	-.06	-.1	-.24	-.28	999
-.26	-.08	-.06	0	-.28	-.28
-.14	-.02	.62	.64	-.18	-.14

Means					
-.176	-.084	-.012	-.012	-.196	-.197
S.D.					
N					
10	10	10	10	10	6

DVA High Contrast Log Mar		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
-.08	-.08	-.08	-.06	-.12	-.12
-.2	-.2	-.2	-.2	-.18	999
-.12	-.1	-.1	-.1	-.14	-.1
-.18	-.14	-.1	-.12	-.2	-.18
-.28	-.2	-.18	-.2	-.26	999
-.2	-.1	-.2	-.18	-.2	-.2
-.22	-.18	-.2	-.1	-.18	999
-.22	-.2	-.18	-.26	-.26	-.26
-.24	-.14	-.2	-.1	-.3	999
-.1	-.1	-.1	-.08	-.16	999

Means					
-.184	-.144	-.154	-.14	-.2	-.172
S.D.					
N					
10	10	10	10	10	5

DVA High Contrast Log Mar		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
-.06	-.02	-.02	-.04	-.1	-.1
-.12	-.04	-.12	-.1	-.18	-.18
-.12	-.1	.12	.02	-.14	999
-.14	-.14	-.1	-.1	-.14	-.04
-.2	-.1	-.1	-.1	-.26	999
-.2	-.08	-.1	-.08	-.2	-.2
-.18	-.16	-.18	-.1	-.2	999
-.22	-.2	-.2	-.2	-.18	-.26
-.26	.02	-.06	.02	-.24	999
-.1	.58	.7	.7	-.14	999

Means					
-.16	-.024	-6E-03	2E-03	-.178	-.156
S.D.					
N					
10	10	10	10	10	5

DVA Low Contrast # of Letters			Placebo		
55	55	56	55	55	56
60	59	58	55	63	999
55	57	57	56	58	57
54	54	55	53	57	999
60	60	60	55	64	60
60	59	60	60	60	999
60	60	58	60	61	60
60	64	62	63	65	999
61	55	58	54	63	62
58	57	57	57	58	58

Means					
58.3	58	58.1	56.8	60.4	58.833
S.D.					
2.627	3.018	2.079	3.19	3.34	2.229
N					
10	10	10	10	10	6

DVA Low Contrast # of Letters			600mg/70kg 2-PAM Cl		
55	55	55	55	59	999
60	60	60	60	60	61
57	57	55	55	56	999
57	57	54	54	57	60
60	62	62	64	65	999
55	55	57	60	58	59
57	999	58	56	60	59
60	60	59	59	58	999
60	61	60	55	64	64
58	57	57	58	60	999

Means					
57.9	58.222	57.7	57.6	59.7	60.6
S.D.					
2.025	2.587	2.584	3.169	2.869	2.074
N					
10	9	10	10	10	5

DVA Low Contrast # of Letters			1200mg/70kg 2-PAM Cl		
55	55	55	55	59	56
60	60	60	60	61	999
58	58	58	57	65	55
59	56	55	55	58	999
57	57	59	59	59	64
58	60	60	60	60	999
59	60	61	59	60	999
59	56	60	59	62	62
59	62	60	56	63	999
56	55	56	56	58	59
Means					
58	57.9	58.4	57.6	60.5	59.2
S.D.					
1.563	2.47	2.271	2.011	2.273	3.834
N					
10	10	10	10	10	5

DVA Low Contrast # of Letters			2mg/70kg Atropine		
55	56	57	58	59	999
60	60	60	60	62	60
57	58	55	55	58	999
56	54	54	54	55	56
60	56	58	59	65	999
60	60	60	60	63	60
61	58	60	60	60	999
60	54	55	56	61	62
59	58	57	57	58	63
57	55	55	57	61	999
Means					
58.5	56.9	57.1	57.6	60.2	60.2
S.D.					
2.068	2.234	2.331	2.171	2.86	2.683
N					
10	10	10	10	10	5

DVA Low Contrast # of Letters			4mg/70kg Atropine		
56	55	56	55	55	56
60	60	55	59	62	999
55	53	55	55	59	57
54	48	45	45	53	999
60	55	60	55	64	60
59	57	55	55	60	999
60	55	53	49	58	58
60	57	56	59	56	60
64	57	54	47	63	999
57	15	18	21	59	60
Means					
58.5	51.2	50.7	50	58.9	58.5
S.D.					
2.991	13.105	12.093	11.245	3.542	1.761
N					
10	10	10	10	10	6

DVA Low Contrast # of Letters			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
56	55	55	55	57	999
60	60	60	61	62	63
58	58	60	58	60	999
56	54	50	50	55	59
59	55	57	58	63	59
59	62	60	59	65	999
58	59	55	59	61	63
58	58	59	58	64	999
60	55	60	57	60	62
56	56	56	57	58	57
Means					
58	57.2	57.2	57.2	60.5	60.5
S.D.					
1.563	2.616	3.293	2.974	3.171	2.51
N					
10	10	10	10	10	6

DVA Low Contrast	# of Letters	4mg/70kg Atropine	& 600mg/70kg 2-PAM	C1
57	57	55	57	999
60	57	55	60	60
56	55	55	53	999
55	50	50	55	999
60	55	55	60	65
60	55	55	60	999
60	60	60	62	64
61	55	55	57	999
62	55	45	53	64
56	45	13	12	55

Means				
58.7	54.4	49.8	50	57.9
S.D.				61.6
2.452	4.142	13.514	13.482	2.767
N				4.159
10	10	10	10	10
				5

DVA Low Contrast	# of Letters	2mg/70kg Atropine	& 1200mg/70kg 2-PAM	C1
54	54	55	58	55
60	61	60	61	999
55	57	55	55	56
57	55	50	58	999
58	58	55	59	999
60	55	54	60	999
63	57	56	64	61
57	57	59	64	999
58	57	56	64	65
56	55	55	63	999
			59	999

Means				
57.8	56.6	55.6	56	60.2
S.D.				59.25
2.658	2.011	2.914	3.432	2.898
N				4.646
10	10	10	10	10
				4

DVA Low Contrast	# of Letters	4mg/70kg Atropine	& 1200mg/70kg 2-PAM	C1
55	54	55	58	57
60	57	60	60	61
55	55	50	55	999
57	56	50	55	55
60	55	55	65	999
60	55	55	60	999
61	60	57	60	60
60	55	58	61	999
62	50	50	63	63
58	20	9	5	999
56			56	999
Means				
58.8	51.7	49.9	49.6	59.3
S.D.				59.2
2.44	11.412	14.791	16.078	3.335
N				3.194
10	10	10	10	10
				5

DVA Low Contrast Log Mar		Placebo			
0	0	-.02	0	0	-.02
-.1	-.08	-.06	0	-.16	999
0	-.04	-.04	-.02	-.06	-.04
-.1	-.1	-.1	0	-.18	-.1
-.1	-.08	-.1	-.1	-.1	999
-.1	-.1	-.06	-.1	-.12	-.1
-.1	-.18	-.14	-.16	-.2	999
-.12	0	-.06	.02	-.16	-.14
-.06	-.04	-.04	-.04	-.06	-.06
Means					
-.066	-.06	-.062	-.036	-.108	-.077
S.D.					
N					
10	10	10	10	10	6
DVA Low Contrast Log Mar		600mg/70kg 2-PAM Cl			
0	0	0	0	-.08	999
-.1	-.1	-.1	-.1	-.1	-.12
-.04	-.04	0	0	-.02	999
-.04	-.04	.02	.02	-.04	-.1
-.1	-.14	-.14	-.18	-.2	999
0	0	-.04	-.1	-.06	-.08
-.04	999	-.06	-.02	-.1	-.08
-.1	-.1	-.08	-.08	-.06	999
-.1	-.12	-.1	0	-.18	-.18
-.06	-.04	-.04	-.06	-.1	999
Means					
-.058	-.064	-.054	-.052	-.094	-.112
S.D.					
N					
10	9	10	10	10	5
DVA Low Contrast Log Mar		1200mg/70kg 2-PAM Cl			
0	0	0	0	-.08	-.02
-.1	-.1	-.1	-.1	-.12	999
-.06	-.06	-.06	-.04	-.2	0
-.08	-.02	0	0	-.06	999
-.04	-.04	-.08	-.08	-.08	-.16
-.06	-.1	-.1	-.1	-.1	999
-.08	-.1	-.12	-.08	-.1	999
-.08	-.02	-.1	-.08	-.14	-.14
-.08	-.14	-.1	-.02	-.16	999
-.02	0	-.02	-.02	-.06	-.06
Means					
-.06	-.058	-.068	-.052	-.11	
S.D.					
N					
10	10	10	10	10	

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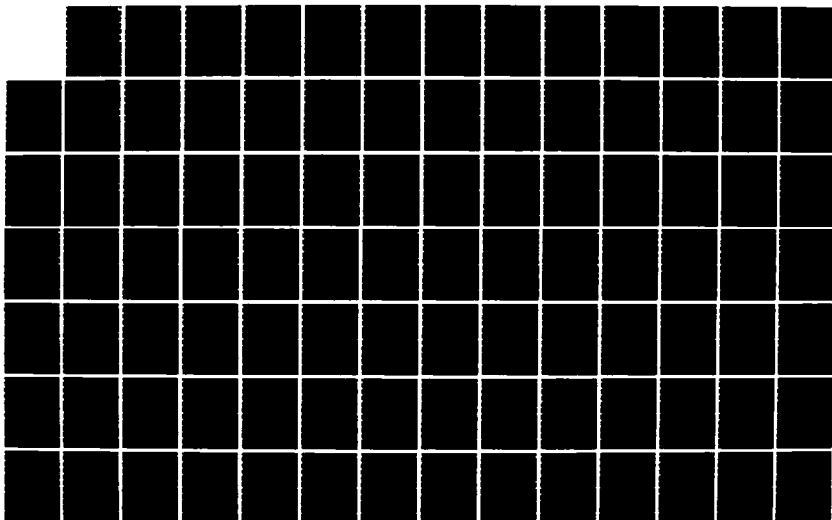
EFFECT OF ATROPINE AND 2-PAM CHLORIDE ON VISION AND
PERFORMANCE(U) MEDICAL RESEARCH INST OF SAN FRANCISCO
CA A JAMPOLSKY ET AL 31 MAY 86 DAND17-83-C-3198

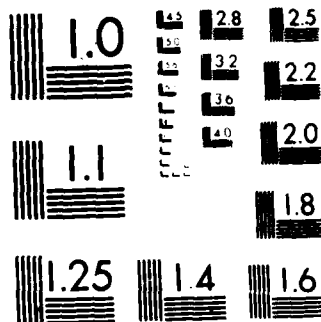
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NATIONAL BUREAU OF STANDARDS-1963-A

DVA Low Contrast Log Mar		2mg/70kg Atropine			
0	-.02	-.04	-.06	-.08	999
-.1	-.1	-.1	-.1	-.14	-.1
-.04	-.06	0	0	-.06	999
-.02	.02	.02	.02	0	-.02
-.1	-.02	-.06	-.08	-.2	999
-.1	-.1	-.1	-.1	-.16	-.1
-.12	-.06	-.1	-.1	-.1	999
-.1	.02	0	-.02	-.12	-.14
-.08	-.06	-.04	-.04	-.06	-.16
-.04	0	0	-.04	-.12	999

Means					
-.07	-.038	-.042	-.052	-.104	-.104
S.D.					
N					
10	10	10	10	10	5

DVA Low Contrast Log Mar		4mg/70kg Atropine			
-.02	0	-.02	0	0	-.02
-.1	-.1	0	-.08	-.14	999
0	.04	0	0	-.08	-.04
-.1	0	-.1	0	-.18	-.1
-.08	-.04	0	0	-.1	999
-.1	0	.04	.12	-.06	-.06
-.1	-.04	-.02	-.08	-.02	-.1
-.18	-.04	.02	.16	-.16	999
-.04	.8	.74	.68	-.08	-.1

Means					
-.07	.076	.086	.1	-.078	-.07
S.D.					
N					
10	10	10	10	10	6

DVA Low Contrast Log Mar		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
-.02	0	0	0	-.04	999
-.1	-.1	-.1	-.12	-.14	-.16
-.06	-.06	-.1	-.06	-.1	999
-.02	.02	.1	.1	0	-.08
-.08	0	-.04	-.06	-.16	-.08
-.08	-.14	-.1	-.08	-.2	999
-.06	-.08	0	-.08	-.12	-.16
-.06	-.06	-.08	-.06	-.18	999
-.1	0	-.1	-.04	-.1	-.14
-.02	-.02	-.02	-.04	-.06	-.04

Means					
-.06	-.044	-.044	-.044	-.11	-.11
S.D.					
N					
10	10	10	10	10	6

DVA Low Contrast Log Mar	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
-.04	-.04	0
-.1	-.04	0
-.02	0	.04
0	.1	.1
-.1	0	0
-.1	0	0
-.1	-.1	-.1
-.12	0	-.04
-.14	0	.2
-.02	.2	.84

Means		
-.074	.012	.104
S.D.		
N		
10	10	10

DVA Low Contrast Log Mar	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
-.1	-.12	-.1
0	-.04	0
-.04	0	.1
-.06	-.06	0
-.1	0	.02
-.16	-.04	-.02
-.04	-.04	-.08
-.06	-.04	-.02
-.02	0	0

Means		
-.056	-.032	-.012
S.D.		
N		
10	10	10

DVA Low Contrast Log Mar	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
0	.02	0
-.1	-.04	-.1
0	0	.1
-.04	-.02	.1
-.1	0	0
-.1	0	0
-.12	-.1	-.04
-.1	0	-.06
-.14	.1	.1
-.06	.7	.92

Means		
-.076	.066	.102
S.D.		
N		
10	10	10

Pupil Size (mm)	Placebo				
3.5	3.5	3.5	3.5	3.5	3.5
3.5	5	4	4	4	999
3	3.5	3	3	3.75	3.5
3	3	2.75	3	3.5	999
3	3	3	3	3.75	3.5
3.5	3.5	3.75	4	5	999
3.75	4	3.75	3.5	4.5	4.25
3.5	3.75	4	3.5	4	999
3.25	3.25	3.25	3.25	3.5	3.5
3	3	3	3	3	3.75

Means					
3.3	3.55	3.4	3.375	3.85	3.667
S.D.					
N					
10	10	10	10	10	6

Pupil Size (mm)	600mg/70kg 2-PAM Cl				
3	3.5	3	3	3	999
4	3.5	4	4	3.5	4
3.25	3.5	3.75	3.75	3.5	999
3.5	4	3.5	4	3.5	3.5
3	3.25	3	3.25	3	999
3.75	3.75	3.75	3.75	3.25	4
4	999	4	4	3.75	3.75
4	4	3.75	4	4	999
3	3.25	3.25	3.25	2.75	2.75
3.25	3	3	3.25	3.25	999

Means					
3.475	3.528	3.5	3.625	3.35	3.6
S.D.					
N					
10	9	10	10	10	5

Pupil Size (mm)	1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3.5	4	4	4	4	999
3	3	3	3	4.5	3.5
3	3	3	3	4	999
3	3	3	3	4	3
4	3.5	3.5	3.75	4.5	999
4	3.75	3.5	3.75	5	999
3.5	3.5	3.5	3.75	3.75	5
2.75	2.75	3	2.75	3.25	999
3	3	3.25	3.25	3.5	3

Means					
3.275	3.25	3.275	3.325	3.95	3.5
S.D.					
N					
10	10	10	10	10	5

Pupil Size (mm)	2mg/70kg	Atropine			
3.5	4	4	4	3.5	999
4.5	4	4.5	5	4	4.5
2.75	3.75	4	3.5	3.5	999
3.5	4.5	4.75	3.75	3.5	4
3.5	4.75	5	4.75	5	999
3.5	4.75	4.75	5.25	4	4.5
3.75	5.25	5	5.5	4	999
4	4	4.5	5	4.5	4
3.25	4	4.5	4.75	3.75	3
3	4	4	3.75	3.25	999

Means					
3.525	4.3	4.5	4.525	3.9	4
S.D.					
N					
10	10	10	10	10	5

Pupil Size (mm)	4mg/70kg	Atropine			
3	4.5	4.5	4.5	3.5	3.5
4	5	6	5	5.5	999
3	4.75	4.5	4.5	4.75	4.5
2.75	4	5	4.5	4	999
3	6	5	5	3.5	3
3.75	5.5	5	5	5	999
4	6	6.5	5.5	4	4
4	5	5	5	5	4.25
2.75	4.5	4.75	4.75	3.75	999
2.75	4.5	4.75	5	3.5	3.25

Means					
3.3	4.975	5.1	4.875	4.25	3.75
S.D.					
N					
10	10	10	10	10	6

Pupil Size (mm)	2mg/70kg	Atropine & 600mg/70kg	2-PAM Cl		
3	3	3	3	3.5	999
3.5	4	5.5	5.75	5	4.5
3.25	3.75	4.25	4.5	4	999
3	3.5	4.25	4	3	3.75
3.1	4	4.5	4	3.5	3.25
3.5	4	4.5	4.5	4.5	999
3.5	4.75	5.25	4.75	4.5	5
4	4.5	4.5	4.5	4	999
2.75	4	3.75	4	3.5	3.5
3.25	4.25	4.25	4	3.25	3

Means					
3.285	3.975	4.375	4.3	3.875	3.833
S.D.					
N					
10	10	10	10	10	6

Pupil Size (mm)	4mg/70kg	Atropine & 600mg/70kg	2-PAM Cl	
3	4.5	4.75	4.5	3.5
4.5	6.5	7	6.5	6
3	5	5.25	4.75	4
3	3.75	4.5	4.25	4.5
3	6	5.5	5.25	3.5
3.5	5	5	5.25	5.5
3.5	5	5	5	4.5
3.5	4.75	4.75	5.25	4.5
2.75	4.75	4.75	5	4
2.75	4.5	4.75	4.75	3.75

Means				
3.25	4.975	5.125	5.05	4.375
S.D.				
N				
10	10	10	10	5

Pupil Size (mm)	2mg/70kg	Atropine & 1200mg/70kg	2-PAM Cl	
3	3.5	4	3.5	3
4	4	4.5	5.5	5
3	3.75	3.75	3.75	3
3.5	4.25	4	4.5	4
3	3.75	4	3.5	3.5
3.5	5	5	5.25	5.5
3.5	5	5	4.5	4.5
4	4.5	4.5	4.25	4
3.25	4	4.25	4.5	3.75
3	4.25	4	4.25	3.75

Means				
3.375	4.2	4.3	4.35	4
S.D.				
N				
10	10	10	10	5

Pupil Size (mm)	4mg/70kg	Atropine & 1200mg/70kg	2-PAM Cl	
3.5	4.5	5.5	5.5	3.5
4	5	5	4.5	5
3.25	5	5	5.25	4.25
3	5.75	5.5	5.25	4
3	4	5	4.5	4
3.5	5.25	6	5.75	5
3.75	5.5	5.5	5.75	4.5
3.75	5.25	5	5.25	4
3	4.25	4.5	5	4.5
3.25	4.25	4.75	5	3.75

Means				
3.4	4.875	5.175	5.175	4.25
S.D.				
N				
10	10	10	10	5

Pupil Response (0-5)	Placebo				
5	5	5	5	5	5
5	5	5	5	5	999
5	5	5	5	5	5
3	3.5	3.5	3.5	5	999
5	5	5	5	5	5
5	5	5	5	999	999
5	5	5	5	5	5
5	5	5	5	5	999
5	5	5	5	5	5
5	5	5	5	5	999

Means					
4.8	4.85	4.85	4.85	5	5
S.D.					
N					
10	10	10	10	9	5

Pupil Response (0-5)	600mg/70kg 2-PAM Cl				
5	5	5	5	5	999
5	5	5	5	5	5
5	5	5	5	5	999
5	5	5	5	5	5
5	5	5	5	5	999
5	5	5	5	5	5
5	999	5	5	5	999
5	5	5	5	999	999
5	5	5	5	5	5
5	5	5	5	5	999

Means					
5	5	5	5	5	5
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	9	4

Pupil Response (0-5)	1200mg/70kg 2-PAM Cl				
5	5	5	5	5	5
5	5	5	5	5	999
5	5	5	5	5	5
4	5	3	3	4	999
5	5	5	5	4	5
4	5	5	5	5	999
5	5	5	5	999	999
5	5	5	5	5	999
5	5	5	5	5	999
5	5	5	5	5	5

Means					
4.8	5	4.8	4.8	4.778	5
S.D.					
N					
10	10	10	10	9	4

Pupil Response (0-5)	2mg/70kg Atropine				
5	5	5	5	5	999
5	5	5	5	5	5
5	4	2	4	5	999
5	4	4	4	4	4
4	4	3	4	999	999
5	3	4	4	5	4
5	2	3	3	5	999
5	5	5	5	5	5
5	5	5	5	5	5
5	3	4	4	5	999

Means					
4.9	4	4	4.3	4.889	4.6
S.D.					
N					
10	10	10	10	9	5

Pupil Response (0-5)	4mg/70kg Atropine				
5	4	5	5	5	5
5	4	4	4	5	999
5	4	3	3	5	4
4	1	0	1	4	999
5	4	4	4	5	5
5	2	2	4	5	999
5	4	4	5	5	5
5	5	4	4	4	999
5	4	2	3	5	999
5	1	1	3	5	5

Means					
4.9	3.3	2.9	3.6	4.8	4.8
S.D.					
N					
10	10	10	10	10	5

Pupil Response (0-5)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
5	5	5	5	5	999
5	5	5	4	5	5
5	5	3	3	5	999
5	5	4	4	5	5
4.9	4	4	5	4	5
4	3	3	4	4	999
5	2	3	3	5	5
5	4	5	5	5	999
5	5	4	5	5	999
5	4	4	5	5	5

Means					
4.89	4.2	4	4.3	4.8	5
S.D.					
N					
10	10	10	10	10	5

Pupil Response (0-5)	4mg/70kg Atropine	600mg/70kg 2-PAM Cl	
5	4	4	999
5	4	4	5
5	2	3	999
4	1	3	999
5	3	4	999
5	3	3	999
5	1	3	5
4	1.5	2	999
5	2	3	5
5	1	0	5

Means				
4.8	2.8	2.25	2.9	4.6
S.D.				
N				
10	10	10	10	4

Pupil Response (0-5)	2mg/70kg Atropine	1200mg/70kg 2-PAM Cl	
5	5	5	5
5	4	4	999
5	5	5	5
5	4	4	5
5	4	5	999
5	4	3	999
5	4	3	999
5	5	3	5
5	4	4	999
5	4	4	999

Means				
5	4.4	4	4.35	4.889
S.D.				
0	.516	.816	.747	.333
N				
10	10	10	10	9

Pupil Response (0-5)	4mg/70kg Atropine	1200mg/70kg 2-PAM Cl	
5	4	4.5	5
5	4	4	5
5	2	3	999
5	3	2	5
5	4	4	999
5	3	3	5
5	3	3	999
5	1	1	5
5	1	3	999
5	3	1	999

Means				
5	2.8	2.3	2.85	4.7
S.D.				
0	1.135	1.494	1.203	.483
N				
10	10	10	10	5

Acc. Amp. Primary Gaze (cm)	Placebo				
16.3	14.8	16.8	16.2	16.2	21.7
11.5	11.2	12	12	13	999
12.7	13	13	12	11.2	13.2
14.2	13.2	12.7	12.5	12.3	999
14.7	15.8	15.3	15.3	14.5	16.2
16.2	16.3	14	13.8	14	999
24.7	23.8	24	20.7	18.8	24
14.5	13	13.8	10.5	12.2	999
12.2	12	11.8	13.7	11	11.7
15.2	16.8	14.3	13.7	13.3	15.8

Means					
15.22	14.99	14.77	14.04	13.65	17.1
S.D.					
3.699	3.617	3.579	2.87	2.389	4.809
N					
10	10	10	10	10	6

Acc. Amp. Primary Gaze (cm)	600mg/70kg 2-PAM Cl				
19.7	17.2	17.33	17.5	16.5	999
13	12	12	11.7	11.7	13.5
12.2	12.7	12.5	12.8	13	999
14.2	14.2	14.2	14.2	13	13.2
14.7	13.5	13.8	14	14.3	999
15	14	14	14	14.5	13.5
35.3	999	30.8	33.2	22	31.7
14.7	11.8	13.3	14.2	19	999
12.2	13	12.5	11.3	11.5	12
11.5	11.7	13.2	11.3	14	999

Means					
16.25	13.344	15.363	15.42	14.95	16.78
S.D.					
7.081	1.713	5.622	6.516	3.335	8.363
N					
10	9	10	10	10	5

Acc. Amp. Primary Gaze (cm)	1200mg/70kg 2-PAM Cl				
17.5	18.3	17.2	16.2	14	14.3
12	12.3	11.5	11.3	12	999
13.2	13.2	12	12.2	10.7	13.2
12.8	12.2	13.7	13	13.2	999
12.5	13.3	12.3	13	13.5	12
13	16	15.8	16	13.7	999
24.7	25.7	25.7	23	26.3	999
14.2	11.7	13.8	13.2	12	12.5
11.3	11	11.5	11	11	999
17.2	16	16	16	16.5	17.1

Means					
14.84	14.97	14.95	14.49	14.29	13.82
S.D.					
4.036	4.416	4.28	3.553	4.541	2.027
N					
10	10	10	10	10	5

Acc.	Amp.	Primary Gaze (cm)	2mg/70kg Atropine		
17	20	19.5	19.3	17.2	999
10	11	11.2	10.7	11.2	12.2
11.7	13.3	12.5	12.7	13.2	999
15.8	16	13	14.3	11.2	12.5
13.8	16.8	16.8	14.5	13.5	999
16.2	19.3	19.2	22.2	11.3	16
22.2	25.5	24.3	20.3	17.3	999
18.3	25	22	23.3	19.3	19.7
12.7	16.8	17.5	17.3	12.3	12
13.2	22	17.3	15.7	13.5	999
Means					
15.09	18.57	17.33	17.03	14	14.48
S.D.					
3.568	4.734	4.197	4.169	2.91	3.348
N					
10	10	10	10	10	5
Acc.	Amp.	Primary Gaze (cm)	4mg/70kg Atropine		
16.2	20.3	21	22.2	19.2	19.5
10.5	17	22.17	22.17	16.33	999
13	14.7	17.3	16	12	13
11.7	19	26	24.3	14.2	999
13.2	24.2	25.3	30.2	14.3	16
12.5	23.7	32.8	31	26.7	999
23.7	32.7	36	36	25.3	31
19.5	29.3	29	27.7	19.7	17.8
12.8	41.5	100	100	18.5	999
12.8	100	100	100	16.3	11.2
Means					
14.59	32.24	40.957	40.957	18.253	18.083
S.D.					
4.083	25.125	31.598	31.609	4.746	7.021
N					
10	10	10	10	10	6
Acc.	Amp.	Primary Gaze (cm)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
13.5	13.2	13.2	13	12	999
11.2	13.2	13.2	14.2	13.5	14
12.2	11.7	12.2	12.2	13.2	999
14	13.2	18	17	16.2	16
13.83	16.3	15.3	15	14.3	13.3
14.3	14.8	14.2	14.7	15.3	999
26.7	42.7	40.7	34.3	31.3	29.7
14	16.7	15.3	18	14.3	999
11.3	14	11.8	12.7	11.3	12
18.3	21.2	20	21.2	18.3	16.5
Means					
14.933	17.7	17.39	17.23	15.97	16.917
S.D.					
4.592	9.184	8.581	6.6	5.753	6.484
N					
10	10	10	10	10	6

Acc. Amp. Primary Gaze (cm)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
14	15	17.2	17	16	999
12	28.3	25.8	22.8	19.2	12.8
14	16.2	21.2	18.2	12.2	999
13.2	11.5	23.7	16.3	14	999
13	30.2	29.2	31	12	14.2
15	21	33.2	34.2	30.8	999
27	31	30.8	27.2	27.6	25.2
12.5	19	23.3	23	16.3	999
11.7	100	100	46.3	15.7	11.8
16.3	100	100	100	18.7	16.7
Means					
14.87	37.22	40.44	33.6	18.25	16.14
S.D.					
4.483	33.735	31.737	25.076	6.282	5.389
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (cm)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
13.5	15	14.8	13	14	14
11.5	13.5	16.2	16	14	999
12.5	13	13	13.5	12.2	14
16	19	18.2	16.5	13.5	14
14.3	18.5	15.5	15	13	999
13.3	20.8	19.8	21	14.8	13.7
33.2	41.7	39.8	39.2	30.3	999
11.3	15	15.3	15.2	13.8	11.8
11.5	26	22	19.2	11.8	999
16.8	47	46.2	46	17.2	999
Means					
15.39	22.95	22.08	21.46	15.46	13.5
S.D.					
6.532	11.991	11.428	11.511	5.422	.959
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (cm)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
16	17	20	22.7	19.2	16.2
10.3	19.5	21.8	22.2	17.2	12.2
11.7	24.7	42.3	100	14	999
12	17.2	24	24	14.5	12.3
14.3	49	100	44.5	20.2	999
14	26	100	100	42.3	17
26.7	26.3	25	26.3	22.2	999
10	18	24.7	27.3	20.8	14.7
11.5	100	100	100	14	999
14.3	100	100	100	100	999
Means					
14.08	39.77	55.78	56.7	28.44	14.48
S.D.					
4.038	33.085	38.531	37.79	26.46	2.197
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (diopters)			Placebo		
6.135	6.757	5.952	6.173	6.173	4.608
8.696	8.929	8.333	8.333	7.692	999
7.874	7.692	7.692	8.333	8.929	7.576
7.042	7.576	7.874	8	8.13000001	999
6.803	6.329	6.536	6.536	6.897	6.173
6.173	6.135	7.143	7.246	7.143	999
4.049	4.202	4.167	4.831	5.31900001	4.167
6.897	7.692	7.246	9.524	8.197	999
8.197	8.333	8.475	7.299	9.091	8.547
6.579	5.952	6.993	7.299	7.519	6.329

Means					
6.844	6.96	7.041	7.357	7.509	6.233
S.D.					
1.3	1.373	1.274	1.312	1.179	1.678
N					
10	10	10	10	10	6

Acc. Amp. Primary Gaze (diopters)			600mg/70kg 2-PAM Cl		
5.076	5.814	5.77	5.714	6.061	999
7.692	8.333	8.333	8.547	8.547	7.407
8.197	7.874	8	7.813	7.692	999
7.042	7.042	7.042	7.042	7.692	7.576
6.803	7.407	7.246	7.143	6.993	999
6.667	7.143	7.143	7.143	6.897	7.407
2.833	999	30.8	33.2	22	31.7
6.803	8.475	7.519	7.042	5.263	999
8.197	7.692	8	8.85	8.696	8.333
8.696	8.547	7.576	8.85	7.143	999

Means					
6.801	7.592	9.743	10.134	8.698	12.485
S.D.					
1.735	.868	7.433	8.164	4.788	10.749
N					
10	9	10	10	10	5

Acc. Amp. Primary Gaze (diopters)			1200mg/70kg 2-PAM Cl		
5.714	5.464	5.814	6.173	7.143	6.993
8.333	8.13000001	8.696	8.85	8.333	999
7.576	7.576	8.333	8.197	9.346	7.576
7.813	8.197	7.299	7.692	7.576	999
8	7.519	8.13000001	7.692	7.407	8.333
7.692	6.25	6.329	6.25	7.299	999
4.049	3.891	3.891	4.348	3.802	999
7.042	8.547	7.246	7.576	8.333	8
8.85	9.091	8.696	9.091	9.091	999
5.814	6.25	6.25	6.25	6.061	5.848

Means					
7.088	7.092	7.068	7.212	7.439	7.35
S.D.					
1.467	1.604	1.527	1.45	1.606	.978
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (diopters)			2mg/70kg Atropine		
5.882	5	5.128	5.181	5.814	999
10	9.091	8.929	9.346	8.929	8.197
8.547	7.519	8	7.874	7.576	999
6.329	6.25	7.692	6.993	8.929	8
7.246	5.952	5.952	6.897	7.407	999
6.173	5.181	5.208	4.505	8.85	6.25
4.505	3.922	4.115	4.926	5.78	999
5.464	4	4.545	4.292	5.181	5.076
7.874	5.952	5.714	5.78	8.13000001	8.333
7.576	4.545	5.78	6.369	7.407	999

Means					
6.96	5.741	6.106	6.216	7.4	7.171
S.D.					
1.616	1.611	1.582	1.605	1.391	1.443
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (diopters)			4mg/70kg Atropine		
6.173	4.926	4.762	4.505	5.208	5.128
9.524	5.882	4.511	4.511	6.12400001	999
7.692	6.803	5.78	6.25	8.333	7.692
8.547	5.263	3.846	4.115	7.042	999
7.576	4.132	3.953	3.311	6.993	6.25
8	4.219	3.049	3.226	3.745	999
4.219	3.058	2.778	2.778	3.953	3.226
5.128	3.413	3.448	3.61	5.076	5.618
7.813	2.41	1	1	5.405	999
7.813	1	1	1	6.135	8.929

Means					
7.249	4.111	3.413	3.431	5.801	6.141
S.D.					
1.606	1.718	1.538	1.601	1.425	1.999
N					
10	10	10	10	10	6

Acc. Amp. Primary Gaze (diopters)			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
7.407	7.576	7.576	7.692	8.333	999
8.929	7.576	7.576	7.042	7.407	7.143
8.197	8.547	8.197	8.197	7.576	999
7.143	7.576	5.556	5.882	6.173	6.25
7.231	6.135	6.536	6.667	6.993	7.519
6.993	6.757	7.042	6.803	6.536	999
3.745	2.342	2.457	2.915	3.195	3.367
7.143	5.988	6.536	5.556	6.993	999
8.85	7.143	8.475	7.874	8.85	8.333
5.464	4.717	5	4.717	5.464	6.061

Means					
7.11	6.436	6.495	6.335	6.752	6.446
S.D.					
1.552	1.794	1.791	1.62	1.592	1.724
N					
10	10	10	10	10	6

Acc. Amp. Primary Gaze (diopters)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
7.143	6.667	5.814	5.882	6.25	999
8.333	3.534	3.876	4.386	5.208	7.813
7.143	6.173	4.717	5.495	8.197	999
7.576	8.696	4.219	6.135	7.143	999
7.692	3.311	3.425	3.226	8.333	7.042
6.667	4.762	3.012	2.924	3.247	999
3.704	3.226	3.247	3.676	3.623	3.968
8	5.263	4.292	4.348	6.135	999
8.547	1	1	2.16	6.369	8.475
6.135	1	1	1	5.348	5.988

Means					
7.094	4.363	3.46	3.923	5.985	6.657
S.D.					
1.401	2.45	1.524	1.66	1.702	1.766
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (diopters)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
7.407	6.667	6.757	7.692	7.143	7.143
8.696	7.407	6.173	6.25	7.143	999
8	7.692	7.692	7.407	8.197	7.143
6.25	5.263	5.495	6.061	7.407	7.143
6.993	5.405	6.452	6.667	7.692	999
7.519	4.808	5.051	4.762	6.757	7.299
3.012	2.398	2.513	2.551	3.3	999
8.85	6.667	6.536	6.579	7.246	8.475
8.696	3.846	4.545	5.208	8.475	999
5.952	2.128	2.165	2.174	5.814	999

Means					
7.138	5.228	5.338	5.535	6.917	7.441
S.D.					
1.763	1.964	1.817	1.892	1.47	.582
N					
10	10	10	10	10	5

Acc. Amp. Primary Gaze (diopters)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
6.25	5.882	5	4.405	5.208	6.173
9.709	5.128	4.587	4.505	5.814	8.197
8.547	4.049	2.364	1	7.143	999
8.333	5.814	4.167	4.167	6.897	8.13000001
6.993	2.041	1	2.247	4.95	999
7.143	3.846	1	1	2.364	5.882
3.745	3.802	4	3.802	4.505	999
10	5.556	4.049	3.663	4.808	6.803
8.696	1	1	1	7.143	999
6.993	1	1	1	1	999

Means					
7.641	3.812	2.817	2.679	4.983	7.037
S.D.					
1.84	1.888	1.701	1.571	2.02	1.081
N					
10	10	10	10	10	5

Acc.	Amp.	Up Gaze (cm)	Placebo			
16.2		14.8	16.7	16.2	16	24.3
12		12	11.7	11.5	12.7	999
14		15	15.5	14.3	14.8	15.2
16.2		13.8	13.8	14.2	14	999
15.7		15.8	16	15.3	15.2	16.7
16.5		17	17	14.7	13.7	999
25.2		24.7	22.3	23.3	18.5	24.2
14.2		12.7	13	10.8	11.7	999
13		12.7	14.2	15	13	13.5
15.7		17.3	16.2	15.8	15.7	16.5
Means						
15.87		15.58	15.64	15.11	14.53	18.4
S.D.						
3.609		3.677	2.901	3.367	1.957	4.673
N						
10		10	10	10	10	6
Acc.	Amp.	Up Gaze (cm)	600mg/70kg 2-PAM	C1		
20.3		17.7	17.17	17.67	16.33	999
12		11.2	11	10.5	11.7	13
15.2		15	13.3	15.5	14	999
16		15	15.2	15.5	15	14.2
14.7		13.8	14	14.5	14.8	999
15.8		14.3	14.5	14.5	17	14
35.3		999	32	35.3	25	33
14		12	13.7	14	16.3	999
14.8		15	15.5	14.7	14.7	15
15.3		14.7	13.8	14	15	999
Means						
17.34		14.3	16.017	16.617	15.983	17.84
S.D.						
6.644		1.882	5.84	6.802	3.493	8.505
N						
10		9	10	10	10	5
Acc.	Amp.	Up Gaze (cm)	1200mg/70kg 2-PAM	C1		
17		18	16.3	15	14	14
11.8		12	12	11.7	12.3	999
13.8		14	14	13.2	13.3	14.2
15.2		13.3	15.5	14.3	15	999
14.2		14.2	13	13.3	15.5	13
14.2		16.2	16.3	16.5	17.5	999
25		27.3	26.3	22.7	27.3	999
12		12.5	13	12	11.2	13.2
14		15.3	14.2	13	13.7	999
18.8		18.2	17.7	17.8	18.3	15.7
Means						
15.6		16.1	15.83	14.95	15.81	14.02
S.D.						
3.914		4.469	4.087	3.331	4.588	1.069
N						
10		10	10	10	10	5

Acc. Amp. Up Gaze (cm)	2mg/70kg Atropine				
16.2	20.5	19.7	19.7	17.5	999
10.8	11.7	11.3	10.8	10.2	12.2
14	14.8	15.2	16	14.8	999
16.5	16.5	14.2	15.2	15.2	15.2
15.3	19	16.5	15.8	15.5	999
16.3	20.2	20.2	24.2	12.3	16.3
20.2	24.2	22.7	22.3	19	999
19.7	23.3	22.3	23	20.3	21.3
14	18.2	19.8	20.8	15.3	15.3
16	24.7	19.3	19	16	999

Means					
15.9	19.31	18.12	18.68	15.61	16.06
S.D.					
2.731	4.197	3.69	4.184	2.951	3.307
N					
10	10	10	10	10	5

Acc. Amp. Up Gaze (cm)	4mg/70kg Atropine				
16.5	20.7	21.8	21.5	18.2	19.2
10.8	19	23	22	16.83	999
14.3	15.3	17.8	19	15	15.3
15.5	23.3	30	27	15	999
14.2	25.3	28	31	13.2	15.3
13.7	25.8	38	33.7	28.7	999
27.7	28.7	37.7	35	25	30.7
19.8	27.7	28.3	25.7	20.3	18.5
15	47	100	100	18.5	999
15.3	100	100	100	17.7	14

Means					
16.28	33.28	42.46	41.49	18.843	18.833
S.D.					
4.607	24.937	30.989	31.277	4.766	6.155
N					
10	10	10	10	10	6

Acc. Amp. Up Gaze (cm)	2mg/70kg Atropine	600mg/70kg 2-PAM Cl			
13.3	13.3	13.3	12.5		999
11.5	14.3	13.5	14.2		14.3
15.5	15.8	15.5	14.3		999
15	15	18.2	18	16.2	17.5
14.775	17.2	16.2	15.3	15	14
16.2	15.8	14.3	17	16	999
27.3	43.7	36	35.3	32	27.5
15	15.8	16	19	14.7	999
13.8	15.8	16	16	15.7	12.8
18.7	21.2	25.8	23	19.7	19.2

Means					
16.108	18.79	18.48	18.54	17.1	17.55
S.D.					
4.359	9.002	7.119	6.539	5.547	5.431
N					
10	10	10	10	10	6

Acc.	Amp.	Up Gaze (cm)	4mg/70kg Atropine	& 600mg/70kg 2-PAM Cl	
14.5	16.2	18	17.5	16	999
12.5	27	25.8	23	19.5	12.5
14.5	17.3	22	19.2	15.5	999
15.7	22	24.5	21	14.5	999
13.3	32	31.2	32.3	12.3	14.7
16.2	22.2	33.8	34	32	999
26.3	32.2	29.3	26.7	26.8	25
14	16.3	27.7	23.8	15.8	999
15.2	100	100	100	19	14
17.3	100	100	100	24.3	17.5

Means					
15.95	38.52	41.23	39.75	19.57	16.74
S.D.					
3.895	32.924	31.299	32.185	6.25	4.961
N					
10	10	10	10	10	5

Acc.	Amp.	Up Gaze (cm)	2mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
14	15.8	15.3	13.2	14.3	14.8
12.5	14	16.5	16.2	14	999
14	15	14.5	14	14	14.2
17	19.3	19.2	16.3	13.8	14
15.3	20.5	15.7	15.5	14.2	999
14	23.3	20.7	20.8	16.3	12.3
32.7	42.3	38	41.7	30.7	999
12	14	15.7	16.8	13.7	11.7
14	32.7	25.3	22.3	16	999
18.2	100	100	100	20	999

Means					
16.37	29.69	28.09	27.68	16.7	13.4
S.D.					
6.038	26.344	26.247	26.725	5.287	1.329
N					
10	10	10	10	10	5

Acc.	Amp.	Up Gaze (cm)	4mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
16.2	16.3	20	22.5	20	16.2
12	25.5	23.2	23	16.9	12.2
15.3	29.3	45.3	100	16	999
16	20.7	26	24.3	15.8	14
15	49.2	100	44.3	20.3	999
14.7	27	100	100	46.7	17.3
26.5	23.3	24.2	28.7	22.8	999
11.7	18	28.3	30.2	18.2	14.2
15	100	100	100	20.3	999
17	100	100	100	19.7	999

Means					
15.94	40.93	56.7	57.3	21.67	14.78
S.D.					
4.081	32.432	37.865	37.254	9.065	1.998
N					
10	10	10	10	10	5

Acc. Amp. Up Gaze (diopters) Placebo					
6.173	6.757	5.988	6.173	6.25	4.115
8.333	8.333	8.547	8.696	7.874	999
7.143	6.667	6.452	6.993	6.757	6.579
6.173	7.246	7.246	7.042	7.143	999
6.369	6.329	6.25	6.536	6.579	5.988
6.061	5.882	5.882	6.803	7.299	999
3.968	4.049	4.484	4.292	5.405	4.132
7.042	7.874	7.692	9.259	8.547	999
7.692	7.874	7.042	6.667	7.692	7.407
6.369	5.78	6.173	6.329	6.369	6.061

Means					
6.532	6.679	6.576	6.879	6.991	5.714
S.D.					
1.17	1.265	1.12	1.361	.912	1.332
N					
10	10	10	10	10	6

Acc. Amp. Up Gaze (diopters) 600mg/70kg 2-PAM Cl					
4.926	5.65	5.824	5.659	6.12400001	999
8.333	8.929	9.091	9.524	8.547	7.692
6.579	6.667	7.519	6.452	7.143	999
6.25	6.667	6.579	6.452	6.667	7.042
6.803	7.246	7.143	6.897	6.757	999
6.329	6.993	6.897	6.897	5.882	7.143
2.833	999	32	35.3	25	33
7.143	8.333	7.299	7.143	6.135	999
6.757	6.667	6.452	6.803	6.803	6.667
6.536	6.803	7.246	7.143	6.667	999

Means					
6.249	7.106	9.605	9.827	8.573	12.309
S.D.					
1.465	.978	7.915	9.005	5.819	11.573
N					
10	9	10	10	10	5

Acc. Amp. Up Gaze (diopters) 1200mg/70kg 2-PAM Cl					
5.882	5.556	6.135	6.667	7.143	7.143
8.475	8.333	8.333	8.547	8.13000001	999
7.246	7.143	7.143	7.576	7.519	7.042
6.579	7.519	6.452	6.993	6.667	999
7.042	7.042	7.692	7.519	6.452	7.692
7.042	6.173	6.135	6.061	5.714	999
4	3.663	3.802	4.405	3.663	999
8.333	8	7.692	8.333	8.929	7.576
7.143	6.536	7.042	7.692	7.299	999
5.31900001	5.495	5.65	5.618	5.464	6.369

Means					
6.706	6.546	6.608	6.941	6.698	7.164
S.D.					
1.351	1.39	1.294	1.285	1.492	.523
N					
10	10	10	10	10	5

Acc. Amp. Up Gaze (diopters)		2mg/70kg Atropine			
6.173	4.878	5.076	5.076	5.714	999
9.259	8.547	8.85	9.259	9.804	8.197
7.143	6.757	6.579	6.25	6.757	999
6.061	6.061	7.042	6.579	6.579	6.579
6.536	5.263	6.061	6.329	6.452	999
6.135	4.95	4.95	4.132	8.13000001	6.135
4.95	4.132	4.405	4.484	5.263	999
5.076	4.292	4.484	4.348	4.926	4.695
7.143	5.495	5.051	4.808	6.536	6.536
6.25	4.049	5.181	5.263	6.25	999

Means					
6.473	5.442	5.768	5.653	6.641	6.428
S.D.					
1.218	1.388	1.39	1.537	1.42	1.25
N					
10	10	10	10	10	5

Acc. Amp. Up Gaze (diopters)		4mg/70kg Atropine			
6.061	4.831	4.587	4.651	5.495	5.208
9.259	5.263	4.348	4.545	5.942	999
6.993	6.536	5.618	5.263	6.667	6.536
6.452	4.292	3.333	3.704	6.667	999
7.042	3.953	3.571	3.226	7.576	6.536
7.299	3.876	2.632	2.967	3.484	999
3.61	3.484	2.653	2.857	4	3.257
5.051	3.61	3.534	3.891	4.926	5.405
6.667	2.128	1	1	5.405	999
6.536	1	1	1	5.65	7.143

Means					
6.497	3.897	3.228	3.31	5.581	5.681
S.D.					
1.471	1.551	1.478	1.439	1.24	1.398
N					
10	10	10	10	10	6

Acc. Amp. Up Gaze (diopters)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
7.519	7.519	7.519	7.519	8	999
8.696	6.993	7.407	7.042	7.042	6.993
6.452	6.329	6.452	6.993	6.667	999
6.667	6.667	5.495	5.556	6.173	5.714
6.768	5.814	6.173	6.536	6.667	7.143
6.173	6.329	6.993	5.882	6.25	999
3.663	2.288	2.778	2.833	3.125	3.636
6.667	6.329	6.25	5.263	6.803	999
7.246	6.329	6.25	6.25	6.369	7.813
5.348	4.717	3.876	4.348	5.076	5.208

Means					
6.52	5.931	5.919	5.822	6.217	6.085
S.D.					
1.334	1.475	1.517	1.411	1.312	1.538
N					
10	10	10	10	10	6

Acc. Amp. Up Gaze (diopters)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
6.897	6.173 5.556 5.714 6.25 999
8	3.704 3.876 4.348 5.128 8
6.897	5.78 4.545 5.208 6.452 999
6.369	4.545 4.082 4.762 6.897 999
7.519	3.125 3.205 3.096 8.13000001 6.803
6.173	4.505 2.959 2.941 3.125 999
3.802	3.106 3.413 3.745 3.731 4
7.143	6.135 3.61 4.202 6.329 999
6.579	1 1 1 5.263 7.143
5.78	1 1 1 4.115 5.714

Means	
6.516	3.907 3.325 3.602 5.542 6.332
S.D.	
1.152	1.902 1.429 1.618 1.56 1.54
N	
10	10 10 10 10 5

Acc. Amp. Up Gaze (diopters)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
7.143	6.329 6.536 7.576 6.993 6.757
8	7.143 6.061 6.173 7.143 999
7.143	6.667 6.897 7.143 7.143 7.042
5.882	5.181 5.208 6.135 7.246 7.143
6.536	4.878 6.369 6.452 7.042 999
7.143	4.292 4.831 4.808 6.135 8.13000001
3.058	2.364 2.632 2.398 3.257 999
8.333	7.143 6.369 5.952 7.299 8.547
7.143	3.058 3.953 4.484 6.25 999
5.495	1 1 1 5 999

Means	
6.588	4.806 4.986 5.212 6.351 7.524
S.D.	
1.507	2.124 1.932 2.096 1.304 .771
N	
10	10 10 10 10 5

Acc. Amp. Up Gaze (diopters)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
6.173	6.135 5 4.444 5 6.173
8.333	3.922 4.31 4.348 5.917 8.197
6.536	3.413 2.208 1 6.25 999
6.25	4.831 3.846 4.115 6.329 7.143
6.667	2.033 1 2.257 4.926 999
6.803	3.704 1 1 2.141 5.78
3.774	4.292 4.132 3.484 4.386 999
8.547	5.556 3.534 3.311 5.495 7.042
6.667	1 1 1 4.926 999
5.882	1 1 1 5.076 999

Means	
6.563	3.589 2.703 2.596 5.045 6.867
S.D.	
1.318	1.775 1.624 1.505 1.2 .941
N	
10	10 10 10 10 5

Acc.	Amp.	Down Gaze (cm)	Placebo			
13.5	13.8	12	14.5	15.2	24.7	
9.3	9.5	9.3	9.5	9.3	999	
9.5	10	9.2	9.2	9.3	9.2	
9.3	9.5	8.5	8	9	999	
13	14	13.2	12.2	12.3	14.3	
12.7	13.2	14.2	13	11.5	999	
23.5	18.5	21.2	19.5	17	22.3	
10.8	8.2	10.2	8	10.5	999	
8.8	10.3	10	14.5	9.2	11.3	
11	11	11.7	10.2	9.7	12.5	
Means						
12.14	11.8	11.95	11.86	11.3	15.717	
S.D.						
4.337	3.08	3.736	3.635	2.782	6.299	
N						
10	10	10	10	10	6	
Acc.	Amp.	Down Gaze (cm)	600mg/70kg 2-PAM Cl			
19.5	16.2	16.33	16.33	16	999	
10.2	9.2	9.2	9.2	9.3	10	
9	9.3	9.3	8.8	10	999	
10.3	9.5	9.7	9.3	11.2	9.3	
13	12.2	12	12	12.5	999	
10.3	9.3	10.2	10.3	13.8	12	
34.3	999	32.8	34.3	24.2	27	
12	14	12.8	11.8	15	999	
7.8	8	8.3	8.3	7.7	7.7	
9.5	8	7.8	9.3	9.3	999	
Means						
13.59	10.633	12.843	12.963	12.9	13.2	
S.D.						
7.966	2.862	7.453	7.86	4.795	7.867	
N						
10	9	10	10	10	5	
Acc.	Amp.	Down Gaze (cm)	1200mg/70kg 2-PAM Cl			
15.3	17.2	14.5	14.5	12.5	12.5	
9.7	9.2	9	9.2	10	999	
9	9	9.2	9.2	9.3	10	
9.2	8.7	10.2	8.7	9.3	999	
9.3	10.3	11.2	10.7	16	11	
12.2	13.3	14	13.2	13.8	999	
23.3	26.3	21	24.7	23.8	999	
10.3	9.3	9.5	10.3	9.5	12.8	
8.8	8.8	7.8	9.8	7.7	999	
14.2	13	13	14.8	13.5	14.2	
Means						
12.13	12.51	11.94	12.51	12.54	12.1	
S.D.						
4.544	5.575	3.899	4.833	4.73	1.634	
N						
10	10	10	10	10	5	

Acc.	Amp.	Down Gaze (cm)	2mg/70kg Atropine			
15.2		19.2	17.5	17.2	16.3	999
9.2		9.7	9.2	9.5	9.3	10
8.5		10.2	9.8	11.3	9	999
12		12.2	9.2	10.2	10.8	10.5
12.2		16	15.5	13.8	12.8	999
14.2		18	18	21.3	13.2	13
18.7		24.2	21	21.3	16.7	999
19.7		27	23	25	19.7	19.3
9.3		14	16.3	15.3	10	8.7
10.2		15.2	14.3	11.7	10.5	999
Means						
12.92		16.57	15.38	15.66	12.83	12.3
S.D.						
3.965		5.692	4.837	5.367	3.637	4.212
N						
10		10	10	10	10	5

Acc.	Amp.	Down Gaze (cm)	4mg/70kg Atropine			
15.8	19.2	19.8	22	18	18.7	
9.3	16.5	18.33	19.67	15.83	999	
10	10.3	12	12	9	9.4	
11	17.3	22	18.5	9.2	999	
11.2	24	25.3	28.3	14.2	13	
10.3	21.5	31.7	28.5	25.7	999	
26	28	36.7	35	19.3	27	
19.7	29.8	26.9	28	17.7	17	
9.8	43	100	100	13.8	999	
10.5	100	100	100	13	8.8	
Means						
13.36	30.96	39.273	39.197	15.573	15.65	
S.D.						
5.519	25.864	32.741	32.686	4.971	6.826	
N						
10	10	10	10	10	6	

Acc.	Amp.	Down Gaze (cm)	2mg/70kg Atropine &	600mg/70kg 2-PAM Cl	
12.7	12.2	11.5	11.5	10.3	999
9.5	10.3	11	11.2	12.5	11.5
8.2	8.8	10.2	9.2	11.2	999
10.7	13	16	16	14	14
12.163	15.8	16.2	14.3	13	11.3
12	14.8	13.2	15	13.7	999
23	38.3	38.7	31.3	30.7	26.2
12.7	15.3	17.7	14.2	12.3	999
6.7	10.5	11.5	9.8	10	9
12.2	18.2	20.2	17.7	13	12.8
Means					
11.986	15.72	16.62	15.02	14.07	14.133
S.D.					
4.378	8.442	8.426	6.346	5.996	6.144
N					
10	10	10	10	10	6

Acc.	Amp.	Down Gaze (cm)	4mg/70kg Atropine	& 600mg/70kg 2-PAM Cl	
12	14	17.2	16	16.5	999
10.3	19.7	21.3	21.8	17.5	11.5
11	12.8	14.3	13.7	11.2	999
9.5	13.3	16.3	13.2	9.5	999
11.2	30	30.8	30.3	12.7	13.3
13.2	20.5	32.2	31	29.3	999
24	30.7	28.5	26.8	23	21
10.2	17.8	29.7	23.7	12.7	999
7.7	100	100	46.7	11	8.8
12.3	100	100	100	15.3	13.8
Means					
12.14	35.88	39.03	32.32	15.87	13.68
S.D.					
4.445	34.368	32.772	25.792	6.153	4.536
N					
10	10	10	10	10	5

Acc.	Amp.	Down Gaze (cm)	2mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
11.5	17	12.2	11.5	13.5	13
9.5	11.2	15.3	12.5	11.5	999
10.3	10.3	10	10	10.2	10.5
12.5	12.5	12.2	10.5	8.5	10.5
15.2	17.3	15.5	13.8	12	999
11	19.3	18.8	19.2	13.7	11
29.3	39.2	36.3	38	27.8	999
9.3	16	14	14.2	12.5	9.3
7.7	25.8	18.2	20.7	10	999
14	42.7	48	46	14	999
Means					
13.03	21.13	20.05	19.64	13.37	10.86
S.D.					
6.14	11.379	12.267	12.431	5.375	1.35
N					
10	10	10	10	10	5

Acc.	Amp.	Down Gaze (cm)	4mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
15.2	12.5	18.2	20.5	19.3	17.2
8.5	21.5	22.3	19.8	15.7	11.2
9.2	20	45	45	10	999
12.3	16	20.2	16.8	11.3	8.8
12.2	47.8	100	42	19	999
12.3	25.7	48.5	48.7	41.3	15.5
19.2	22.5	25.5	26.7	22.3	999
9.5	16.5	27.7	28.2	15.5	14.5
7.3	100	100	100	13.8	999
11.8	100	100	100	13.8	999
Means					
11.75	38.25	50.74	44.77	18.2	13.44
S.D.					
3.498	33.941	35.412	31.127	8.94	3.393
N					
10	10	10	10	10	5

Acc. Amp. Down Gaze (diopters)			Placebo		
7.407	7.246	8.333	6.897	6.579	4.049
10.753	10.526	10.753	10.526	10.753	999
10.526	10	10.87	10.87	10.753	10.87
10.753	10.526	11.765	12.5	11.111	999
7.692	7.143	7.576	8.197	8.13000001	6.993
7.874	7.576	7.042	7.692	8.696	999
4.255	5.405	4.717	5.128	5.882	4.484
9.259	12.195	9.804	12.5	9.524	999
11.364	9.709	10	6.897	10.87	8.85
9.091	9.091	8.547	9.804	10.309	8
Means					
8.897	8.942	8.941	9.101	9.261	7.208
S.D.					
2.162	2.05	2.126	2.518	1.881	2.615
N					
10	10	10	10	10	6
Acc. Amp. Down Gaze (diopters)			600mg/70kg 2-PAM Cl		
5.128	6.173	6.12400001	6.12400001	6.25	999
9.804	10.87	10.87	10.87	10.753	10
11.111	10.753	10.753	11.364	10	999
9.709	10.526	10.309	10.753	8.929	10.753
7.692	8.197	8.333	8.333	8	999
9.709	10.753	9.804	9.709	7.246	8.333
2.915	999	32.8	34.3	24.2	27
8.333	7.143	7.813	8.475	6.667	999
12.821	12.5	12.048	12.048	12.987	12.987
10.526	12.5	12.821	10.753	10.753	999
Means					
8.775	9.935	12.168	12.273	10.579	13.815
S.D.					
2.919	2.255	7.521	7.937	5.231	7.558
N					
10	9	10	10	10	5
Acc. Amp. Down Gaze (diopters)			1200mg/70kg 2-PAM Cl		
6.536	5.814	6.897	6.897	8	8
10.309	10.87	11.111	10.87	10	999
11.111	11.111	10.87	10.87	10.753	10
10.87	11.494	9.804	11.494	10.753	999
10.753	9.709	8.929	9.346	6.25	9.091
8.197	7.519	7.143	7.576	7.246	999
4.292	3.802	4.762	4.049	4.202	999
9.709	10.753	10.526	9.709	10.526	7.813
11.364	11.364	12.821	10.204	12.987	999
7.042	7.692	7.692	6.757	7.407	7.042
Means					
9.018	9.013	9.056	8.777	8.812	8.389
S.D.					
2.393	2.675	2.428	2.375	2.629	1.16
N					
10	10	10	10	10	5

Acc. Amp.	Down Gaze (diopeters)	2mg/70kg Atropine			
6.579	5.208	5.714	5.814	6.135	999
10.87	10.309	10.87	10.526	10.753	10
11.765	9.804	10.204	8.85	11.111	999
8.333	8.197	10.87	9.804	9.259	9.524
8.197	6.25	6.452	7.246	7.813	999
7.042	5.556	5.556	4.695	7.576	7.692
5.348	4.132	4.762	4.695	5.988	999
5.076	3.704	4.348	4	5.076	5.181
10.753	7.143	6.135	6.536	10	11.494
9.804	6.579	6.993	8.547	9.524	999

Means					
8.377	6.688	7.19	7.071	8.324	8.778
S.D.					
2.369	2.222	2.51	2.294	2.119	2.426
N					
10	10	10	10	10	5

Acc. Amp.	Down Gaze (diopeters)	4mg/70kg Atropine			
6.329	5.208	5.051	4.545	5.556	5.348
10.753	6.061	5.456	5.084	6.317	999
10	9.709	8.333	8.333	11.111	10.638
9.091	5.78	4.545	5.405	10.87	999
8.929	4.167	3.953	3.534	7.042	7.692
9.709	4.651	3.155	3.509	3.891	999
3.846	3.571	2.725	2.857	5.181	3.704
5.076	3.356	3.717	3.571	5.65	5.882
10.204	2.326	1	1	7.246	999
9.524	1	1	1	7.692	11.364

Means					
8.346	4.583	3.894	3.884	7.056	7.438
S.D.					
2.384	2.379	2.176	2.161	2.351	3.048
N					
10	10	10	10	10	6

Acc. Amp.	Down Gaze (diopeters)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
7.874	8.197	8.696	8.696	9.709	999
10.526	9.709	9.091	8.929	8	8.696
12.195	11.364	9.804	10.87	8.929	999
9.346	7.692	6.25	6.25	7.143	7.143
8.222	6.329	6.173	6.993	7.692	8.85
8.333	6.757	7.576	6.667	7.299	999
4.348	2.611	2.584	3.195	3.257	3.817
7.874	6.536	5.65	7.042	8.13000001	999
14.925	9.524	8.696	10.204	10	11.111
8.197	5.495	4.95	5.65	7.692	7.813

Means					
9.184	7.421	6.947	7.45	7.785	7.905
S.D.					
2.854	2.475	2.238	2.28	1.863	2.412
N					
10	10	10	10	10	6

Acc.	Amp.	Down Gaze (diopeters)	4mg/70kg	Atropine & 600mg/70kg	2-PAM Cl
8.333	7.143	5.814	6.25	6.061	999
9.709	5.076	4.695	4.587	5.714	8.696
9.091	7.813	6.993	7.299	8.929	999
10.526	7.519	6.135	7.576	10.526	999
8.929	3.333	3.247	3.3	7.874	7.519
7.576	4.878	3.106	3.226	3.413	999
4.167	3.257	3.509	3.731	4.348	4.762
9.804	5.618	3.367	4.219	7.874	999
12.987	1	1	2.141	9.091	11.364
8.13000001	1	1	1	6.536	7.246

Means					
8.925	4.664	3.887	4.333	7.037	7.917
S.D.					
2.259	2.493	2.032	2.151	2.228	2.401
N					
10	10	10	10	10	5

Acc.	Amp.	Down Gaze (diopeters)	2mg/70kg	Atropine & 1200mg/70kg	2-PAM Cl
8.696	5.882	8.197	8.696	7.407	7.692
10.526	8.929	6.536	8	8.696	999
9.709	9.709	10	10	9.804	9.524
8	8	8.197	9.524	11.765	9.524
6.579	5.78	6.452	7.246	8.333	999
9.091	5.181	5.31900001	5.208	7.299	9.091
3.413	2.551	2.755	2.632	3.597	999
10.753	6.25	7.143	7.042	8	10.753
12.987	3.876	5.495	4.831	10	999
7.143	2.342	2.083	2.174	7.143	999

Means					
8.69	5.85	6.218	6.535	8.204	9.317
S.D.					
2.634	2.51	2.44	2.737	2.175	1.1
N					
10	10	10	10	10	5

Acc.	Amp.	Down Gaze (diopeters)	4mg/70kg	Atropine & 1200mg/70kg	2-PAM Cl
6.579	8	5.495	4.878	5.181	5.814
11.765	4.651	4.484	5.051	6.369	8.929
10.87	5	2.222	2.222	10	999
8.13000001	6.25	4.95	5.952	8.85	11.364
8.197	2.092	1	2.381	5.263	999
8.13000001	3.891	2.062	2.053	2.421	6.452
5.208	4.444	3.922	3.745	4.484	999
10.526	6.061	3.61	3.546	6.452	6.897
13.699	1	1	1	7.246	999
8.475	1	1	1	7.246	999

Means					
9.158	4.239	2.975	3.183	6.351	7.891
S.D.					
2.538	2.31	1.73	1.727	2.177	2.265
N					
10	10	10	10	10	5

Stereopsis (min. of arc)		Placebo			
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
999	999	999	999	999	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	20

Means					
20	20	20	20	20	20
S.D.					
0	0	0	0	0	0
N					
9	9	9	9	9	6

Stereopsis (min. of arc)		600mg/70kg 2-PAM Cl			
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
999	999	999	999	999	999
20	999	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999

Means					
20	20	20	20	20	20
S.D.					
0	0	0	0	0	0
N					
9	8	9	9	9	4

Stereopsis (min. of arc)		1200mg/70kg 2-PAM Cl			
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
999	999	999	999	999	999
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	999

Means					
20	20	20	20	20	20
S.D.					
0	0	0	0	0	0
N					
9	9	9	9	9	4

Stereopsis (min. of arc)		2mg/70kg Atropine			
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
999	999	999	999	999	999
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	20
20	20	20	20	20	999

Means					
20	20	20	20	20	20
S.D.					
0	0	0	0	0	0
N					
9	9	9	9	9	4

Stereopsis (min. of arc)		4mg/70kg Atropine			
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	30	20	20	999
20	20	20	20	20	20
999	999	999	999	999	999
20	20	20	20	20	20
20	20	20	20	20	20
20	70	400	400	20	999
20	400	400	400	20	20

Means					
20	26.25	21.429	20	20	20
S.D.					
0	17.678	3.78	0	0	0
N					
9	8	7	7	9	6

Stereopsis (min. of arc)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	20
999	999	999	999	999	999
20	20	20	20	20	20
20	20	20	20	20	999
20	20	20	20	20	20
20	20	20	20	20	20

Means					
20	20	20	20	20	20
S.D.					
0	0	0	0	0	0
N					
9	9	9	9	9	6

Stereopsis (min. of arc)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
20	20	20	20	20	999
20	40	50	20	40	20
40	50	30	30	20	999
20	20	20	20	20	999
20	30	60	70	20	20
999	999	999	999	999	999
20	20	20	20	20	20
20	20	20	20	20	999
20	400	400	400	20	20
20	400	400	400	20	20

Means					
22.222	28.571	31.429	28.571	22.222	20
S.D.					
6.667	12.15	16.762	18.645	6.667	0
N					
9	7	7	7	9	5

Stereopsis (min. of arc)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
20	20	20	20	20	20
20	20	20	20	20	999
40	30	50	40	40	50
20	20	20	20	20	20
20	20	20	20	30	999
999	999	999	999	999	999
20	20	20	20	20	999
20	20	20	20	20	20
20	70	40	40	20	999
20	50	200	100	20	999

Means					
22.222	30	26.25	33.333	23.333	27.5
S.D.					
6.667	18.028	11.877	26.458	7.071	15
N					
9	9	8	9	9	4

Stereopsis (min. of arc)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
20	50	30	30	20	20
20	50	20	20	20	20
20	20	200	20	20	999
20	20	20	20	20	20
20	40	400	400	20	999
999	999	999	999	999	999
20	20	20	20	20	999
20	20	400	70	20	20
20	400	400	400	20	999
20	400	400	400	20	999

Means					
20	31.429	22.5	30	20	20
S.D.					
0	14.639	5	20	0	0
N					
9	7	4	6	9	4

Color Confusion Index	Placebo				
0	0	0	0	14	0
0	0	0	0	0	999
999	999	999	999	0	0
0	0	0	0	0	999
0	0	0	0	0	0
0	0	0	999	0	999
0	0	0	0	0	0
0	0	0	0	0	999
0	0	9	0	5	5
0	0	0	0	0	0

Means					
0	0	1	0	1.9	.833
S.D.					
0	0	3	0	4.533	2.041
N					
9	9	9	8	10	6

Color Confusion Index	600mg/70kg 2-PAM Cl				
0	0	0	0	27	999
0	6	0	0	0	0
0	0	0	0	0	999
0	0	0	0	0	0
0	0	0	0	0	999
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	999
5	0	0	0	0	0
0	0	0	0	5	999

Means					
S.D.					
1.581	1.897	0	0	8.509	0
N					
10	10	10	10	10	5

Color Confusion Index	1200mg/70kg 2-PAM Cl				
0	0	0	0	0	0
0	0	0	0	0	999
0	0	0	0	0	0
6	0	0	0	0	999
0	0	6	6	0	0
8	0	9	0	999	999
0	0	0	0	0	999
0	0	0	0	0	0
0	0	0	0	999	999
0	12	5	0	0	999

Means					
1.4	1.2	2	.6	0	0
S.D.					
2.989	3.795	3.367	1.897	0	0
N					
10	10	10	10	8	4

Color Confusion Index	2mg/70kg Atropine				
0	7	0	0	0	999
0	0	0	0	0	0
7	0	0	0	0	999
0	0	5	0	0	0
0	0	0	0	0	999
0	6	0	0	0	0
0	0	0	0	0	999
7	0	0	0	0	0
0	0	9	5	0	5
0	0	10	0	9	999

Means					
1.4	1.3	2.4	.5	.9	1
S.D.					
2.951	2.751	4.061	1.581	2.846	2.236
N					
10	10	10	10	10	5

Color Confusion Index	4mg/70kg Atropine				
0	0	0	0	0	0
0	9	0	0	0	999
0	0	0	0	0	0
0	0	0	0	0	999
6	0	0	0	0	0
5	6	0	5	0	999
0	0	0	0	0	0
0	0	0	0	0	0
5	0	0	0	0	999
0	9	13	39	9	0

Means					
1.6	2.4	1.3	4.4	.9	0
S.D.					
2.591	3.95	4.111	12.258	2.846	0
N					
10	10	10	10	10	6

Color Confusion Index	2mg/70kg Atropine	& 600mg/70kg 2-PAM Cl			
0	0	8	0	0	999
0	0	0	0	0	0
0	0	0	0	0	999
0	0	0	0	0	0
2	0	9	0	0	0
0	7	0	999	0	999
0	0	0	0	0	0
0	0	0	0	0	999
0	0	0	0	0	0
0	0	0	0	0	0

Means					
S.D.					
N					
10	10	10	9	10	6

Color Confusion Index	4mg/70kg Atropine	& 600mg/70kg 2-PAM Cl	
0	0	0	999
0	7	0	0
0	0	0	999
0	0	999	999
12	6	0	0
0	0	0	999
0	0	0	0
0	0	0	999
14	0	0	12
0	5	9	0

Means				
2.6	1.8	.9	0	2.4
S.D.				
5.502	2.936	2.846	0	5.367
N				
10	10	10	9	5

Color Confusion Index	2mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
0	0	0	0
0	0	0	999
0	0	0	0
0	0	0	0
0	6	999	999
0	0	0	8
0	0	0	999
0	0	0	0
0	0	9	999
0	0	5	999
0	0	5	9

Means				
0	.6	.9	1.111	1.6
S.D.				
0	1.897	2.846	2.205	3.578
N				
10	10	10	9	5

Color Confusion Index	4mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
8	24	21	0
0	0	0	0
0	0	8	999
0	0	0	0
0	0	0	999
0	0	0	6
0	0	0	999
0	0	0	0
0	0	0	999
0	0	0	999

Means				
S.D.				
2.53	7.589	0	6.839	2.683
N				
10	10	10	10	5

Color	Matching Means	Placebo
32.8	37.8	34.2
3.4	3.4	4
-.2	-1.2	-.4
-.2	.6	0
3	1.4	2
3.8	4.8	3.8
-3.2	-1.4	-4
3	1.4	-.2
-2	1.8	.2
-1	-1.6	-1

Means		
3.94	4.7	3.86
S.D.		
10.435	11.813	10.915
N		
10	10	10

Color	Matching Means	600mg/70kg 2-PAM Cl
36.4	35.2	39.8
-.4	-1.4	-2.2
1	2.43	1.6
3.4	4	1.6
-3.6	999	-1.4
5.6	7.4	7.2
-2.2	-1.6	.8
-.4	-.2	2.8

Means		
4.06	5.092	5.2
S.D.		
11.655	11.656	12.424
N		
10	9	10

Color	Matching Means	1200mg/70kg 2-PAM Cl
33.6	39.4	34.6
-.6	.8	1.6
-1.2	-2.8	-2.4
-2.2	.4	-.6
3.4	2.8	1
7.2	3.2	6
-3	-4.6	-2.6
5.21	5.2	4
-1.2	-1.4	-1
-1.4	0	-.6

Means		
3.981	4.3	4
S.D.		
10.955	12.668	11.09
N		
10	10	10

Color	Matching Means	2mg/70kg Atropine
36.4	38	40
4.4	1	4
-2.4	.4	-.2
1.4	-.4	2.5
2.2	6.4	3.8
-4.2	-4	-3
3.4	4.2	6.4
3	1.6	.4
1	-1.4	-.6

Means		
4.56	4.62	5.23
S.D.		
11.491	12.07	12.537
N		
10	10	10

Color	Matching Means	4mg/70kg Atropine
40.8	38.8	33.8
-.6	-.2	1.8
-1.4	.2	-1
-.8	-.2	-1.6
1	-.2	2.6
6.2	5.8	4.9
-3.6	-1.2	-2.4
5.8	1.4	3.6
-1	-2.4	-1

Means		
4.66	4.04	3.87
S.D.		
13.07	12.417	10.822
N		
10	10	10

Color	Matching Means	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
38.2	37.8	33
-1.2	-1.8	-1
-1	1	.4
1.6	3	2
5	4	3.8
-4	-2	-2.4
0	-6	-2.8
-2.2	0	-1
-2.2	-2.6	-1.2

Means		
3.5	3.66	3.2
S.D.		
12.441	12.388	10.665
N		
10	10	10

Color Matching Means 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

40	37.4	38.2
1.8	2.2	3
-.2	-.2	-.4
-1.2	1.8	.4
1.4	1.1	0
2.4	4.2	6.4
-2.6	-.6	-3.4
1.8	1.8	1.6
-2	-1.8	-.4
-.4	-4.4	-1.4

Means

4.1	4.15	4.4
S.D.		
12.73	11.924	12.166
N		
10	10	10

Color Matching Means 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

38.2	36.6	37
2.8	.6	3.4
-1.4	-.4	-1.6
2.2	2.6	3.4
2.8	3	2.8
-4.2	-2.4	-2
-.6	-2.6	-1.6
-.2	-2	1.4

Means

4.1	4.06	4.5
S.D.		
12.169	11.712	11.616
N		
10	10	10

Color Matching Means 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

35.8	37.8	37
3	5.2	.8
-1.2	-1	0
-.4	.4	1.4
1.2	-.4	1.8
5.4	3.4	6.2
-2.2	-1.6	-2.8
-4.2	-3.6	2.8
-.8	-6.2	-3

Means

3.68	3.18	4.06
S.D.		
11.598	12.589	11.954
N		
10	10	10

Color Matching	S.D.	Placebo
3.56	3.11	3.9
1.34	3.44	4.24
2.05	.89	1.41
2.28	1.36	1.1
1.6	2.48	.75
1.94	1.62	1.4
2.45	2.06	1.17
1.9	3.3	.98
1.9	2.94	2.83

Means		
1.986	2.25	1.867
S.D.		
N		
10	10	10

Color Matching	S.D.	600mg/70kg 2-PAM Cl
5.97	5.15	5.04
1.67	1.3	0
1.26	2.19	1.36
1.67	3.08	3.21
1.74	.999	2.06
2.33	2.42	2.99
1.17	1.62	1.83
2.24	.98	2.04

Means		
1.899	2.239	2.081
S.D.		
1.565	1.303	1.398
N		
10	9	10

Color Matching	S.D.	1200mg/70kg 2-PAM Cl
3.13	5.41	6.66
1.34	.84	2.41
1.1	1.1	1.52
1.3	1.14	1.34
1.14	2.77	.71
1.1	1.92	3.2
2.87	3.66	4.94
1.33	1.74	1.26
2.24	1.26	1.62

Means		
1.644	2.12	2.551
S.D.		
N		
10	10	10

Color Matching	S.D.	2mg/70kg Atropine
7.09	3.67	3.32
3.78	1.41	1.58
1.34	1.48	1.58
1.36	.8	1.41
1.5	2.42	2.5
1.17	2.42	2.56
1.6	.89	1.79
2.8	2.1	3.6
2.97	2.65	2.06
2	3.5	1.62

Means		
2.561	2.134	2.202
S.D.		
1.809	.996	.771
N		
10	10	10

Color Matching	S.D.	4mg/70kg Atropine
7.98	2.49	5.68
1.2	1.33	3.49
1.5	.75	1.26
1.17	2.14	1.85
1.67	1.94	2.58
1.94	2.99	3.27
1.74	.75	1.74
3.19	2.65	2.87

Means		
2.142	1.922	2.788
S.D.		
2.19	.973	1.227
N		
10	10	10

Color Matching	S.D.	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
2.59	2.59	1.87
3	2	2.3
1.56	.71	1.41
1.58	2.35	1.48
1.41	1.26	1.02
2	1.79	2.48
2.32	.63	1.1
2.04	2.58	2.14

Means		
1.779	1.654	1.631
S.D.		
N		
10	10	10

Color Matching S.D.	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
3.16	4.83
1.6	1.7
1.02	.63
2.06	3.49
1.5	.8
2.71	2.93
1.1	2.71
1.04	3.61

Means	
1.548	2.415
S.D.	
N	
10	10

Color Matching S.D.	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
5.63	3.65
1.1	.89
1.67	1.52
1.94	1.87
2.04	1.41
3.5	1.83
3.93	1.62
1.33	3.03

Means	
2.296	2.067
S.D.	
1.565	.828
N	
10	10

Color Matching S.D.	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
1.7	6.1
1.58	3.35
1.1	1
2.41	1.52
1.67	1.85
1.5	4.13
1.72	1.02
1.6	1.02
1.47	3.97
2.48	1.72

Means	
1.723	2.568
S.D.	
N	
10	10

Color Flashing Means	Placebo
252.2	248
198.2	199.6
209.8	215.4
209.2	213
214.2	208.8
210.2	218.4
195	200.8
211.4	217.8
208.4	210.8
210.8	207

Means	
0	0
S.D.	
0	0
N	
0	0

Color Flashing Means	600mg/70kg 2-PAM Cl
260.4	249.2
205.4	200.2
221	215.6
214.6	215.8
201.8	201.8
193	199.2
193.8	999
206	209
212	209
202.6	201.8

Means	
0	0
S.D.	
0	0
N	
0	0

Color Flashing Means	1200mg/70kg 2-PAM Cl
243	238
199.4	208.6
211.8	215.8
216.2	209.6
199.6	195.8
184.6	212.2
190.8	201.2
203.8	204.4
206.6	201.4
202	208.6

Means	
0	0
S.D.	
0	0
N	
0	0

Color	Flashing Means	2mg/70kg Atropine
251.2	245.2	240.2
203	208.8	209.6
214.8	215.2	210.2
209.8	220.6	210.8
198	199.6	201.8
212	208.4	208.8
199	203.2	198.2
207.8	210.2	207.8
205	208.8	206.2
208.6	203.8	206.8

Means		
0	0	0
S.D.		
0	0	0
N		
0	0	0

Color	Flashing Means	4mg/70kg Atropine
243.2	208	226.6
205.4	205.2	201
218	216	212
215.6	204	203.2
204.8	213.8	207.2
214	206.2	211
198	189	192.6
208.6	208.4	209.8
210	203	207.8
208.8	206.2	202.8

Means		
0	0	0
S.D.		
0	0	0
N		
0	0	0

Color	Flashing Means	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
243	240.6	234
203.2	201.6	207.2
215.2	211.8	215.4
194.2	196.4	203.4
203.7	208.4	198.2
212.8	214.4	210.6
192.5	192.8	194.6
193.2	204	202.6
205.6	207.8	211.3
202	206	209.2

Means		
0	0	0
S.D.		
0	0	0
N		
0	0	0

Color Flashing Means	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
233	228.4
199.6	205.2
210.6	203.8
211.4	217.8
207.4	203
205.2	196.6
206.6	197.2
205.4	208.2
206.6	204
200.6	206

Means	
0	0
S.D.	
0	0
N	
0	0

Color Flashing Means	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
242	237.8
204.2	208.6
200.6	203.2
208	209
197.4	203.4
213	204.8
196.6	200.2
201.8	206.4
205.4	203.2
207	205

Means	
0	0
S.D.	
0	0
N	
0	0

Color Flashing Means	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
246.4	237.8
204	189
210	202.6
206.2	201
206.2	206.8
203	203.8
196.6	195.8
202.8	203.4
210.2	200.6
203.4	207.2

Means	
0	0
S.D.	
0	0
N	
0	0

Color	Flashing S.D.	Placebo
9.18	3.08	4.83
4.09	7.34	3.96
5.76	4.04	4.21
6.94	6.36	4.18
5.49	6.97	5.62
10.67	10.38	6.63
5.51	5.08	6.44
2.58	2.32	11.16
16.7	9.81	9.51
3.31	7.87	4.4

Means		
7.023	6.325	6.094
S.D.		
4.216	2.703	2.454
N		
10	10	10

Color	Flashing S.D.	600mg/70kg 2-PAM Cl
3.26	3.92	1.47
4.16	4.32	3.91
1.41	6.95	5.11
3.44	2.95	4.39
5.31	3.76	6.23
9.92	11.48	10.18
5.71	999	7.45
1.79	4.86	3.71
9.65	3.1	2.8
6.28	6.76	8.94

Means		
5.093	5.344	5.419
S.D.		
2.931	2.712	2.762
N		
10	9	10

Color	Flashing S.D.	1200mg/70kg 2-PAM Cl
5.7	11.68	4.87
11.99	7.13	3.94
5.93	5.93	4.39
6.69	4.72	4.34
6.69	6.9	7.89
11.5	15.02	5.81
3.71	6.34	10.46
6.08	7.86	8.21
8.94	7.12	3.76
6.81	8.01	5

Means		
7.404	8.071	5.867
S.D.		
2.625	3.043	2.238
N		
10	10	10

Color	Flashing S.D.	2mg/70kg Atropine
6.24	8.11	4.07
8.6	5.4	6.43
6.87	5.07	6.14
5.08	3.94	6.05
2.23	9.13	7.57
10.7	10.71	13.79
10.45	3.19	6.31
5.2	3.7	5.4
8.1	5.11	6.82
5.82	3	8.13000001

Means		
6.929	5.736	7.071
S.D.		
2.603	2.67	2.609
N		
10	10	10

Color	Flashing S.D.	4mg/70kg Atropine
3.03	37.34	37.65
9.29	7.7	4.73
5.66	6.1	7.13
7.39	5.22	6.49
10.4	4.31	6.82
13.38	12.29	16.16
3.95	3.52	2.58
4.36	6.44	7.86
11.58	7.67	9.22
3.92	3.6	8.42

Means		
7.296	9.419	10.706
S.D.		
3.668	10.144	10.103
N		
10	10	10

Color	Flashing S.D.	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
9.62	2.61	.71
8.26	7.23	6.46
5.26	4.6	4.77
6.98	3.78	4.98
4.39	5.03	5.81
11.54	9.13	10.24
6.42	7.76	3.5
10	3.63	4.76
3.72	6.18	8.26
6.03	5.18	2.04

Means		
7.222	5.513	5.153
S.D.		
2.57	2.046	2.792
N		
10	10	10

Color	Flashing S.D.	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
10.4	13.45	39.47
5.8	5.7	4.3
4.28	10.99	3.96
5.6	11.6	6.87
4.03	3.95	3.03
6.58	8.43	6.5
5.53	8.45	3.37
5.54	6.65	7.23
1.5	7.29	6.37
2.58	11.3	.42

Means		
5.184	8.781	8.152
S.D.		
2.414	2.996	11.208
N		
10	10	10

Color	Flashing S.D.	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
8.06	7.86	4.09
8.76	7.99	8.79
3.21	7.86	3.42
5.52	5.57	5.83
6.22	5.5	4.77
5.76	9.26	6.1
7.86	5.49	10.68
5.81	6.15	6.97
4.63	9.17	6.16
6.42	10.16	6.32

Means		
6.225	7.501	6.313
S.D.		
1.667	1.734	2.151
N		
10	10	10

Color	Flashing S.D.	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
4.4	13.5	6.4
8.12	7.81	8.12
8.86	3.05	10.6
7.89	10.39	5.07
4.07	6.94	4.96
12.52	5.74	3.06
6.31	4.21	5.18
9.02	10.8	7.98
6.37	7.45	7.03
4.96	4.71	10.01

Means		
7.252	7.46	6.841
S.D.		
2.578	3.285	2.382
N		
10	10	10

570nm Test on Magenta Bkgrnd Placebo

1.94	1.94	1.88
1.92	1.83	2.06
2.329	2.183	1.922
1.765	1.852	1.748
1.835	1.835	1.765
1.796	2.044	2.113
2.174	2.026	1.835
1.726	2.2	1.696
2.37	2.113	1.9
1.678	1.9	1.813

Means

1.953	1.992	1.873
-------	-------	-------

S.D.

N

10	10	10
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570nm Test on Magenta Bkgrnd 600mg/70kg 2-PAM Cl

1.92	1.99	1.57
2.1	2.22	2.04
2.222	2.448	2.296
2.009	2.026	1.783
1.87	1.783	1.97
1.678	1.87	2.026
1.9	999	2.074
1.591	1.852	1.435
2.074	2.026	1.957
1.696	2.044	1.796

Means

1.906	2.029	1.895
-------	-------	-------

S.D.

N

10	9	10
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570nm Test on Magenta Bkgrnd 1200mg/70kg 2-PAM Cl

1.67	1.84	1.796
2.13	1.296	2.209
2.448	2.483	2.678
1.835	2.13	1.726
1.609	1.726	1.57
2.222	2.209	1.726
1.922	2.144	2.057
1.939	1.9	1.97
2.23	2.026	2.074
2.23	1.448	1.557

Means

2.023	1.92	1.936
-------	------	-------

S.D.

N

10	10	10
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570nm Test on Magenta Bkgrnd 2mg/70kg Atropine

1.87	1.45	1.97
1.9	1.73	1.78
2.348	2.239	2.348
2.096	1.483	1.813
1.765	1.622	1.657
1.939	1.87	1.835
2.317	1.922	2.113
1.883	1.448	1.835
1.852	2.183	1.957
1.852	1.557	1.504

Means

1.982	1.75	1.881
-------	------	-------

S.D.

N

10	10	10
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570nm Test on Magenta Bkgrnd 4mg/70kg Atropine

1.45	1.45	1.9
1.77	1.43	1.57
2.278	2.104	2.957
1.765	1.483	1.435
1.748	1.852	2.044
2.591	1.87	2.113
2.161	1.483	1.796
1.835	1.435	1.835
2.026	1.657	1.522
1.939	1.504	1.448

Means

1.956	1.627	1.862
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S.D.

N

10	10	10
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570nm Test on Magenta Bkgrnd 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.23	2.009	2.009
2.522	2.383	2.383
2.361	2.47	2.417
1.59	1.47	1.5
1.752	1.591	1.209
999	999	999
1.748	1.765	1.835
2.009	1.922	1.726
2.139	2.009	2.27
1.696	1.644	1.47

Means

2.005	1.918	1.869
-------	-------	-------

S.D.

N

9	9	9
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570nm Test on Magenta Bkgrnd 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.152	2.174	2.504
1.83	1.59	2.04
2.18	1.68	1.36
2.183	1.504	1.435
1.783	1.504	1.261
2.044	2.113	2.026
2.183	2.044	1.783
1.883	1.796	1.417
2.026	1.939	2.27
1.622	1.47	1.383

Means

1.989	1.781	1.748
-------	-------	-------

S.D.

N

10	10	10
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570nm Test on Magenta Bkgrnd 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

2.222	1.87	2.261
2.296	2.296	2.348
2.348	2.296	2.044
1.78	2.07	1.73
999	999	999
1.9	1.835	2.13
2.161	2.296	1.922
1.657	2.057	2.074
2.161	1.97	2.026
1.448	1.435	1.361

Means

1.997	2.014	1.988
-------	-------	-------

S.D.

N

9	9	9
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570nm Test on Magenta Bkgrnd 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

2.04	1.68	1.79
2.15	1.59	1.97
2.444	1.957	1.726
1.174	1.748	1.609
1.657	1.678	1.47
2.044	1.922	1.835
2.222	1.957	2.217
1.557	1.748	1.748
2.139	1.657	1.97
1.852	1.361	1.435

Means

1.928	1.73	1.777
-------	------	-------

S.D.

N

10	10	10
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570nm Test on Blue Bkgrnd	Placebo
2.13	999
1.87	2.11
2.471	2.013
2.422	2.317
2.326	2.448
2.565	1.935
2.383	2.326
2.435	2.47
2.522	2.435
2.496	2.361

Means	
2.362	2.268
S.D.	2.194
N	
10	9
	10

570nm Test on Blue Bkgrnd	600mg/70kg 2-PAM Cl
2.173	2.11
2.5	2.38
2.591	2.657
2.544	2.557
2.409	2.335
2.557	2.448
2.448	999
2.383	2.174
2.409	2.557
2.417	2.535

Means	
2.443	2.417
S.D.	2.303
N	
10	9
	10

570nm Test on Blue Bkgrnd	1200mg/70kg 2-PAM Cl
2.21	1.66
2.47	2.348
2.417	2.97
2.144	2.104
2.396	2.309
2.348	2.417
2.47	2.174
2.422	2.317
2.631	2.683
2.57	2.191

Means	
2.408	2.317
S.D.	2.215
N	
10	10
	10

570nm Test on Blue Bkgrnd	2mg/70kg Atropine
2.13	2.2
2.36	2.15
2.483	2.417
2.104	2.144
2.161	2.026
2.217	2.248
2.448	2.348
2.309	2.278
2.448	2.278
2.309	2.296

Means	
2.297	2.239
S.D.	
N	
10	10

570nm Test on Blue Bkgrnd	4mg/70kg Atropine
2.24	1.78
2.2	1.85
2.278	2.348
2.348	1.813
2.304	2.261
2.478	2.13
2.522	1.835
2.222	1.796
2.535	2.248
2.457	2.248

Means	
2.358	2.031
S.D.	
N	
10	10

570nm Test on Blue Bkgrnd	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
2.391	2.27
2.535	2.591
2.591	2.309
2.13	1.84
2.262	1.922
999	999
2.765	2.239
2.239	2.191
2.765	2.326
2.174	2.191

Means	
2.428	2.209
S.D.	
N	
9	9

570nm Test on Blue Bkgrnd	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
2.209	2.396
2.09	2
2.483	2.296
2.113	1.504
2.209	2.278
2.396	2.557
2.522	2.361
2.396	2.248
2.57	2.361
2.248	2.113

Means	
2.324	2.211
S.D.	
N	
10	10

570nm Test on Blue Bkgrnd	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
2.074	1.87
2.448	1.678
2.48	2.31
1.5	1.99
999	999
2.483	2.174
2.435	2.261
2.326	1.9
2.678	2.383
2.13	1.9

Means	
2.284	2.052
S.D.	
N	
9	9

570nm Test on Blue Bkgrnd	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
2	1.75
2.25	2.17
2.448	2.104
1.813	1.783
2.026	2.044
2.361	2.296
2.417	2.383
2.726	2.357
3.057	2.309
2.07	2.357

Means	
2.317	2.155
S.D.	
N	
10	10

440nm Test on Yellow Bkgrnd Placebo

2.43	2.49	2.41
2.53	2.52	2.9
2.383	2.396	2.396
2.813	2.717	2.457
2.557	2.835	2.622
2.139	2.383	2.361
2.644	3.217	2.417
2.448	2.152	2.087
2.287	2.2	2.248
2.361	2.13	2.026

Means

2.459	2.504	2.392
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S.D.

N

10	10	10
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440nm Test on Yellow Bkgrnd 600mg/70kg 2-PAM Cl

2.482	2.44	1.91
2.448	2.38	2.396
2.504	2.383	2.796
2.557	2.435	2.326
2.97	2.504	2.417
2.535	2.435	2.709
2.726	999	2.361
2.448	2.383	2.348
2.23	2.144	2.009
2.104	2.261	2.144

Means

2.5	2.374	2.342
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S.D.

N

10	9	10
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440nm Test on Yellow Bkgrnd 1200mg/70kg 2-PAM Cl

2.24	2.1	2.32
2.644	2.748	2.657
2.678	2.535	2.448
2.496	2.361	2.348
2.491	2.557	2.47
2.417	2.417	2.309
2.309	2.448	2.57
2.361	2.309	2.152
2.422	2.183	2.074
2.057	1.97	2.144

Means

2.412	2.363	2.349
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S.D.

N

10	10	10
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440nm Test on Yellow Bkgrnd 2mg/70kg Atropine

2.61	2.45	2.45
2.83	2.9	2.7
2.448	2.383	2.278
2.47	2.261	2.47
2.678	2.657	2.417
999	999	999
2.522	999	2.504
2.222	2.657	2.383
1.913	2.074	2.183
2.304	2.13	2.074

Means

2.444	2.439	2.384
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S.D.

N

9	8	9
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440nm Test on Yellow Bkgrnd 4mg/70kg Atropine

2.33	1.77	2.05
2.5	1.97	2.26
2.57	2.448	2.309
2.326	2.009	1.939
2.606	2.652	2.348
2.309	2.335	2.496
2.435	2.139	2.287
2.383	2.248	1.987
2.287	2.355	2.113
2.278	1.448	1.622

Means

2.402	2.137	2.141
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S.D.

N

10	10	10
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440nm Test on Yellow Bkgrnd 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.813	2.557	2.07
2.609	2.709	2.813
2.448	2.47	2.957
2.45	2.5	2.62
2.525	2.483	2.504
999	999	999
2.383	1.644	2.117
2.47	2.309	2.326
2.417	2.696	2.417
2.335	2.144	2.057

Means

2.494	2.39	2.431
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S.D.

N

9	9	9
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440nm Test on Yellow Bkgrnd 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.504	2.326	2.296
2.66	2.31	2.61
2.66	2.1	2.16
2.609	2.057	1.591
2.504	2.383	2.57
2.222	2.448	2.483
2.557	2.383	2.326
2.383	2.222	2.13
2.783	2.348	2.396
2.144	1.191	1.609

Means

2.503	2.177	2.187
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S.D.

N

10	10	10
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440nm Test on Yellow Bkgrnd 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

2.448	2.361	2.104
2.835	2.783	2.622
2.75	2.73	2.68
3.1	2.62	2.54
999	999	999
2.261	2.296	2.174
2.483	2.483	2.504
2.278	2.174	1.57
2.396	2.217	2.239
2.287	2.044	2.096

Means

2.538	2.412	2.281
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S.D.

N

9	9	9
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440nm Test on Yellow Bkgrnd 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

2.48	2.12	2.28
2.68	2.28	2.71
2.609	2.557	2.57
2.174	1.813	2.113
2.435	2.522	2.326
2.326	2.065	2.07
2.383	2.361	1.939
2.174	1.696	1.87
2.709	2.374	2.47
2.317	1.391	1.417

Means

2.429	2.118	2.177
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S.D.

N

10	10	10
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480nm Test on Yellow Bkgrnd Placebo

2.33	2.56	1.96
2.31	2.42	2.9
2.678	2.448	2.644
2.248	2.583	2.357
2.309	2.417	2.278
1.987	2.304	2.217
2.23	1.87	2.183
1.813	2.009	1.987
2.422	1.939	1.813
1.957	999	1.852

Means

2.228	2.283	2.219
-------	-------	-------

S.D.

N

10	9	10
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480nm Test on Yellow Bkgrnd 600mg/70kg 2-PAM Cl

2.276	2.35	2.1
2.37	2.26	2.31
2.448	2.175	2.361
2.383	2.326	2.296
2.591	2.835	2.417
2.504	2.348	2.191
2.183	999	2.183
2.217	2.348	2.278
2.026	2.144	2.026
1.783	1.939	1.87

Means

2.278	2.303	2.203
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S.D.

N

10	9	10
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480nm Test on Yellow Bkgrnd 1200mg/70kg 2-PAM Cl

2.39	2.14	1.88
2.591	2.535	2.383
2.383	2.504	2.239
2.357	2.361	2.348
2.261	2.296	2.383
2.222	2.261	2.152
2.287	2.504	2.361
2.217	2.348	2.035
2.217	2.13	1.987
1.987	1.796	1.796

Means

2.291	2.288	2.156
-------	-------	-------

S.D.

N

10	10	10
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480nm Test on Yellow Bkgrnd 2mg/70kg Atropine

2.48	1.9	2.04
2.41	2.11	2.56
2.309	2.326	2.348
2.191	1.765	2.422
2.209	2.191	2.535
2.391	2.248	2.217
1.835	2.174	2.435
2.335	2.144	2.13
2.009	1.726	1.183
2.144	1.922	1.9

Means

2.231	2.051	2.177
-------	-------	-------

S.D.

N

10	10	10
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480nm Test on Yellow Bkgrnd 4mg/70kg Atropine

2.13	1.52	1.87
2.37	1.64	1.94
2.522	2.309	2.296
2.348	1.504	1.783
999	999	999
2.309	2.044	2.074
2.383	1.87	1.726
2.2	1.483	2.183
2.248	2.161	1.957
2.144	1.27	1.609

Means

2.295	1.756	1.938
-------	-------	-------

S.D.

N

9	9	9
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480nm Test on Yellow Bkgrnd 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.276	2.435	2.696
2.47	2.435	2.47
2.383	2.174	2.326
2.28	1.9	1.48
2.357	2.144	1.726
999	999	999
2.209	1.835	1.957
1.987	2.074	2.239
2.496	1.813	2.057
2.113	1.678	1.591

Means

2.206	2.054	2.06
-------	-------	------

S.D.

N

9	9	9
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480nm Test on Yellow Bkgrnd 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

2.087	2.348	2.139
2.69	1.9	2.38
2.44	2.17	1.84
2.174	1.522	1.591
2.357	2.361	2.239
2.535	2.296	2.435
2.57	2.765	2.361
2.448	2.161	1.644
2.183	2.074	2.2
2.044	.796	1.523

Means

2.353	2.039	2.035
-------	-------	-------

S.D.

N

10	10	10
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480nm Test on Yellow Bkgrnd 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

2.296	2.209	2.174
2.522	2.609	2.47
2.504	2.296	2.026
2.48	2.52	2.32
999	999	999
2.361	2.144	2.448
2.383	3.096	2.678
2.396	1.939	2.409
2.144	2.113	2.409
2.161	1.47	1.535

Means

2.361	2.266	2.274
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S.D.

N

9	9	9
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480nm Test on Yellow Bkgrnd 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

2.22	1.61	2.22
2.42	1.97	2.17
2.348	2.07	2.074
2.13	2.074	1.535
2.417	2.222	1.883
2.104	1.709	1.678
2.209	2.096	1.9
2.248	1.435	1.922
2.565	2.026	2.27
1.852	.535	1.309

Means

2.251	1.775	1.896
-------	-------	-------

S.D.

N

10	10	10
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480nm	Test on Flicker	Placebo
0.839	0.74	0.7
0.69	0.83	0.78
0.973	0.914	0.827
0.609	0.522	0.479
1.087	1.044	1.00
1.957	0.957	0.87
0.74	0.74	0.696
0.87	0.696	0.7395
0.87	0.827	0.827
0.566	0.566	0.609

Means		
0.82	0.784	0.753
S.D.		
0.167	0.165	0.145
N		
10	10	10

480nm	Test on Flicker	600mg/70kg 2-PAM CI
0.839	0.83	0.65
0.78	0.7	0.7
0.957	0.87	0.8265
0.522	0.522	0.479
0.87	1.087	0.914
0.696	0.653	0.609
0.783	999	0.653
1.087	1.391	1.044
1.001	0.914	0.827
0.609	0.566	0.653

Means		
0.814	0.837	0.736
S.D.		
0.175	0.274	0.166
N		
10	9	10

480nm	Test on Flicker	1200mg/70kg 2-PAM CI
0.78	0.827	0.653
0.827	0.783	0.74
0.957	0.957	0.957
0.522	0.435	0.479
0.914	0.653	0.74
0.479	0.609	0.827
0.609	0.74	0.566
1.435	1.131	1.217
0.827	0.827	0.783
0.653	0.609	0.609

Means		
0.8	0.757	0.757
S.D.		
0.275	0.197	0.212
N		
10	10	10

480nm Test on Flicker		2mg/70kg Atropine
0.78	0.69	0.83
0.93	0.78	0.78
0.87	0.827	1.37
0.479	0.566	0.479
0.827	0.957	0.87
0.74	0.914	0.87
0.696	0.5655	0.609
0.8265	0.957	0.87
0.957	1.001	1.044
0.566	0.522	0.522

Means		
0.767	0.778	0.824
S.D.		
0.153	0.182	0.261
N		
10	10	10

480nm Test on Flicker		4mg/70kg Atropine
0.96	0.83	0.78
0.78	0.7	0.83
1.001	0.87	0.783
0.522	0.435	0.435
1.044	1.087	1.044
0.957	0.914	0.87
0.5655	0.6525	0.6525
0.957	0.827	0.783
1.044	1.001	0.87
0.609	0.609	0.435

Means		
0.844	0.793	0.748
S.D.		
0.207	0.195	0.192
N		
10	10	10

480nm Test on Flicker		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.87	0.87	0.74
0.783	0.87	0.74
1.044	0.957	0.914
0.48	0.48	0.48
0.963	0.696	0.826
999	999	999
0.522	0.435	0.522
1.001	1.087	0.827
0.914	0.87	0.87
0.609	0.566	0.522

Means		
0.798	0.759	0.716
S.D.		
0.212	0.226	0.166
N		
9	9	9

480nm Test on Flicker	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
0.914	0.74
0.69	0.61
1.13	0.914
0.566	0.305
0.957	0.914
0.914	0.87
0.696	0.609
0.783	0.827
0.783	0.74
0.435	0.566

Means	
0.787	0.714
S.D.	
0.203	0.193
N	
10	10

480nm Test on Flicker	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.696	0.74
0.87	0.783
0.914	1.00
1.39	0.57
999	999
0.696	0.827
0.783	0.653
0.87	0.827
0.783	0.609
0.653	0.653

Means	
0.739	0.74
S.D.	
0.159	0.135
N	
9	9

480nm Test on Flicker	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
0.87	0.78
0.7	0.74
0.914	0.696
0.522	0.522
1.044	0.914
0.957	0.87
0.696	0.74
0.827	0.74
0.696	0.522
0.609	0.522

Means	
0.784	0.705
S.D.	
0.165	0.142
N	
10	10

570nm Test on Flicker	Placebo
1.912	1.74
1.69	1.61
2.066	1.827
1.522	1.566
1.74	1.653
1.914	1.87
1.827	1.74
1.9135	1.957
1.653	1.87
1.783	1.74
Means	
1.802	1.753
S.D.	
N	
10	10

570nm Test on Flicker	600mg/70kg 2-PAM Cl
1.912	1.74
1.2	1.65
2.001	2.001
1.653	1.566
1.696	1.24
1.87	1.783
1.783	1.87
2.087	2.391
1.914	1.74
1.74	1.74
Means	
1.786	1.772
S.D.	
N	
10	10

570nm Test on Flicker	1200mg/70kg 2-PAM Cl
1.96	1.74
1.827	1.74
2.001	2.044
1.479	1.522
1.609	1.653
1.783	1.696
1.696	1.609
2.891	2.435
1.74	1.783
1.87	1.739
Means	
1.886	1.796
S.D.	
N	
10	10

570nm Test on Flicker		2mg/70kg Atropine
1.78	1.78	1.87
1.74	1.74	1.74
2.001	1.87	1.914
1.479	1.479	1.435
1.74	1.653	1.696
1.783	1.696	1.914
1.7395	1.5655	1.7395
1.957	1.957	2.087
1.783	1.783	1.827
1.74	1.783	1.653
Means		
1.774	1.731	1.788
S.D.		
N		
10	10	10

570nm Test on Flicker		4mg/70kg Atropine
2.04	1.78	1.78
1.74	1.7	1.65
2.044	1.827	1.914
1.522	1.522	1.348
1.783	1.696	1.87
1.827	1.914	1.827
1.7395	1.609	1.6525
1.957	1.914	2.131
1.914	1.87	1.74
1.783	1.609	1.653
Means		
1.835	1.744	1.757
S.D.		
N		
10	10	10

570nm Test on Flicker		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
1.912	1.914	1.827
1.783	1.783	1.783
2.174	2.044	2.001
1.44	1.52	1.48
1.719	1.696	1.522
999	999	999
1.653	1.609	1.522
2.305	2.044	1.87
1.827	1.827	1.827
1.696	1.696	1.566
Means		
1.834	1.793	1.711
S.D.		
N		
9	9	9

570nm Test on Flicker	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
1.957	1.87
1.65	1.74
2.13	1.96
1.479	1.435
1.653	1.566
1.914	1.783
1.827	1.566
1.957	1.87
1.74	1.652
1.783	1.609
Means	
1.809	1.705
S.D.	
N	
10	10

570nm Test on Flicker	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
1.827	1.783
1.783	1.74
2.001	1.957
1.57	1.61
999	999
1.7395	1.783
1.653	1.957
1.957	1.87
1.783	1.827
1.696	1.696
Means	
1.779	1.803
S.D.	
N	
9	9

570nm Test on Flicker	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
1.91	1.69
1.65	1.52
2.174	1.957
1.696	1.566
1.609	1.653
1.914	1.87
1.696	1.74
2.044	1.914
1.696	1.696
1.827	1.566
Means	
1.822	1.717
S.D.	
N	
10	10

Raw Stroop Color Scores		Placebo		
999	93	999	92	92
110	103	93	83	999
98	100	89	100	96
100	93	101	100	999
96	87	87	89	85
91	92	84	92	999
120	114	114	123	121
100	105	100	111	999
75	76	76	78	82
103	96	109	98	103
Means				
99.222	95.9	94.778	96.6	96.5
S.D.				
12.397	10.461	12.266	13.167	14.181
N				
9	10	9	10	6

Raw Stroop Color Scores		600mg/70kg 2-PAM Cl		
88	92	101	96	999
120	106	110	111	120
103	103	106	103	999
110	120	117	112	124
85	91	93	100	999
73	80	77	72	79
101	96	101	91	106
96	93	93	96	999
88	86	78	88	83
100	93	96	100	999
Means				
96.4	96	97.2	96.9	102.4
S.D.				
13.492	11.255	12.805	11.638	20.695
N				
10	10	10	10	5

Raw Stroop Color Scores		1200mg/70kg 2-PAM Cl		
80	83	78	80	85
130	114	115	109	999
92	100	100	98	112
123	120	117	118	999
80	76	73	86	75
76	80	77	83	83
101	103	105	110	999
89	86	89	92	80
83	83	80	84	999
86	88	93	97	100
Means				
94	93.3	92.7	95.7	89.167
S.D.				
18.607	15.093	16.049	13.073	13.992
N				
10	10	10	10	6

Raw Stroop Color Scores	2mg/70kg Atropine			
86	83	73	115	999
112	108	104	103	110
93	93	95	106	999
100	103	104	102	105
90	92	88	95	999
89	88	93	102	100
122	112	120	125	999
83	81	82	88	91
80	80	76	80	86
100	92	93	107	999
Means				
95.5	93.2	92.8	102.3	98.4
S.D.				
13.252	11.183	14.18	12.772	9.864
N				
10	10	10	10	5

Raw Stroop Color Scores	4mg/70kg Atropine			
80	81	85	82	93
113	102	100	114	999
95	102	96	106	108
106	104	106	111	999
92	92	89	95	95
86	98	100	109	999
90	81	82	96	93
94	999	81	89	94
80	81	76	89	999
100	82	83	110	98
Means				
93.6	91.444	89.8	100.1	96.833
S.D.				
10.627	10.248	10.042	11.259	5.776
N				
10	9	10	10	6

Raw Stroop Color Scores	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
82	92	86	85	999
123	124	116	119	130
101	104	116	116	999
92	87	88	92	90
81	78	75	84	81
80	82	84	86	999
105	100	101	111	106
81	84	98	107	999
82	85	80	85	85
86	91	88	105	100
Means				
91.3	92.7	93.2	99	98.667
S.D.				
14.252	13.59	14.219	14.016	17.952
N				
10	10	10	10	6

Raw Stroop Color Scores		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
94	90	75	96	999
999	999	999	999	999
81	77	79	83	92
104	92	89	104	999
89	87	83	95	86
86	78	81	96	999
113	106	101	117	117
99	85	80	100	999
81	82	73	87	86
98	89	89	106	95

Means				
93.889	87.333	83.333	98.222	95.2
S.D.				
10.775	8.718	8.573	10.171	12.795
N				
9	9	9	9	5

Raw Stroop Color Scores		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
80	79	80	85	88
123	114	117	118	999
84	82	70	94	81
98	96	94	93	84
85	84	82	82	999
82	75	78	92	87
116	105	102	117	999
97	95	94	100	90
80	79	75	94	999
89	95	96	101	999

Means				
93.4	90.4	88.8	97.6	86
S.D.				
15.233	12.703	14.374	11.974	3.536
N				
10	10	10	10	5

Raw Stroop Color Scores		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
999	999	999	999	999
999	96	999	112	109
93	95	87	93	999
109	103	106	94	105
92	88	80	95	999
84	80	81	82	91
118	108	108	123	999
106	84	94	95	97
83	82	77	82	999
106	99	77	101	999

Means				
98.875	92.778	88.75	97.444	100.5
S.D.				
12.677	9.808	12.601	13.22	8.062
N				
8	9	8	9	4

Stroop Color	T Scores	Placebo		
999	59	999	58	58
70	65	59	52	999
62	63	56	63	61
63	59	64	63	999
61	55	55	56	53
57	58	53	58	999
77	73	73	79	77
63	67	63	71	999
47	47	47	49	51
65	61	69	62	65
Means				
62.778	60.7	59.889	61.1	60.833
S.D.				
8.258	7.056	8.177	8.825	9.432
N				
9	10	9	10	6

Stroop Color	T Scores	600mg/70kg 2-PAM C1		
55	58	64	61	999
77	67	70	71	77
65	65	67	65	999
70	77	75	71	79
53	57	59	63	999
45	50	48	45	49
64	61	64	57	67
61	59	59	61	999
55	54	49	55	52
63	59	61	63	999
Means				
60.8	60.7	61.6	61.2	64.8
S.D.				
9.175	7.528	8.488	7.685	13.864
N				
10	10	10	10	5

Stroop Color	T Scores	1200mg/70kg 2-PAM C1		
50	52	49	50	53
83	73	73	69	999
58	63	63	62	71
79	77	75	75	999
50	47	45	54	47
47	50	48	52	52
64	65	67	70	999
56	54	56	58	50
52	52	50	53	999
54	55	59	61	63
Means				
59.3	58.8	58.5	60.4	56
S.D.				
12.428	10.196	10.732	8.579	9.121
N				
10	10	10	10	6

Stroop Color	T Scores	2mg/70kg Atropine		
54	52	45	73	999
71	69	66	65	70
59	59	60	67	999
63	65	66	65	67
57	58	55	60	999
56	55	59	65	63
78	71	77	80	999
52	51	51	55	57
50	50	47	50	54
63	58	59	68	999

Means				
60.3	58.8	58.5	64.8	62.2
S.D.				
8.744	7.391	9.664	8.509	6.686
N				
10	10	10	10	5

Stroop Color	T Scores	4mg/70kg Atropine		
50	51	53	51	59
72	65	63	73	999
60	65	61	67	69
67	66	67	71	999
58	58	56	60	60
54	62	63	69	999
57	51	51	61	59
59	999	51	56	59
50	51	47	56	999
63	51	52	70	62

Means				
59	57.778	56.4	63.4	61.333
S.D.				
7.008	6.833	6.653	7.589	3.933
N				
10	9	10	10	6

Stroop Color	T Scores	2mg/70kg Atropine	& 600mg/70kg 2-PAM Cl	
51	58	54	53	999
79	79	74	76	83
64	66	74	74	999
58	55	55	58	57
51	49	47	53	51
50	51	53	54	999
67	63	64	71	67
51	53	62	68	999
51	53	50	53	53
54	57	55	67	63

Means				
57.6	58.4	58.8	62.7	62.333
S.D.				
9.617	8.934	9.438	9.429	11.776
N				
10	10	10	10	6

Stroop Color	T Scores	4mg/70kg Atropine	& 600mg/70kg 2-PAM Cl	
59	57	47	61	999
999	999	999	999	999
51	48	49	52	58
66	58	56	66	999
56	55	52	60	54
54	49	51	61	999
72	67	64	75	75
63	53	50	63	999
51	51	45	55	54
62	56	56	67	60

Means				
59.333	54.889	52.222	62.222	60.2
S.D.				
7.106	5.732	5.74	6.76	8.672
N				
9	9	9	9	5

Stroop Color	T Scores	2mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
50	49	50	53	55
79	73	75	75	999
53	51	43	59	51
62	61	59	59	53
53	53	51	51	999
51	47	49	58	55
74	67	65	75	999
61	60	59	63	57
50	49	47	59	999
56	60	61	64	999

Means				
58.9	57	55.9	61.6	54.2
S.D.				
10.246	8.628	9.689	8.072	2.28
N				
10	10	10	10	5

Stroop Color	T Scores	4mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
999	999	999	999	999
999	61	999	71	69
59	60	55	59	999
69	65	67	59	67
58	55	50	60	999
53	50	51	51	57
75	69	69	79	999
67	53	59	60	61
52	51	48	51	999
67	63	48	64	999

Means				
62.5	58.556	55.875	61.556	63.5
S.D.				
8.211	6.635	8.357	8.946	5.508
N				
8	9	8	9	4

Raw Stroop Word Scores		Placebo		
999	139	999	135	154
133	134	130	148	999
111	120	110	123	120
138	130	134	144	999
122	118	118	120	125
120	118	109	116	999
156	138	146	150	141
142	140	136	147	999
102	99	105	114	108
149	144	151	134	145
Means				
130.333	128	126.556	133.1	132.167
S.D.				
17.896	14.008	16.779	13.964	17.337
N				
9	10	9	10	6
Raw Stroop Word Scores		600mg/70kg 2-PAM Cl		
157	160	162	149	999
147	115	132	120	150
132	129	134	130	999
145	147	138	140	142
120	119	115	126	999
112	114	110	110	117
142	146	144	143	149
134	140	146	144	999
116	119	117	120	121
150	131	143	152	999
Means				
135.5	132	134.1	133.4	135.8
S.D.				
15.364	15.741	16.176	14.183	15.707
N				
10	10	10	10	5
Raw Stroop Word Scores		1200mg/70kg 2-PAM Cl		
152	146	160	138	146
153	126	136	144	999
122	117	115	119	135
147	132	138	131	999
103	114	105	115	115
115	109	116	115	103
150	151	149	147	999
140	135	147	135	138
116	116	106	126	999
141	127	140	140	140
Means				
133.9	127.3	131.2	131	129.5
S.D.				
18.211	13.905	19.315	11.795	16.718
N				
10	10	10	10	6

Raw Stroop Word Scores		2mg/70kg Atropine		
138	142	136	140	999
144	122	134	140	140
120	123	125	126	999
140	144	140	134	143
120	120	120	123	999
117	112	117	121	123
145	135	143	145	999
122	116	122	129	136
110	105	109	122	119
135	140	146	138	999

Means				
129.1	125.9	129.2	131.8	132.2
S.D.				
12.627	13.56	12.336	8.715	10.616
N				
10	10	10	10	5

Raw Stroop Word Scores		4mg/70kg Atropine		
139	136	139	142	156
148	120	125	146	999
124	103	130	133	130
142	144	122	137	999
127	115	120	125	117
124	127	129	130	999
135	124	133	146	147
140	999	120	133	139
113	111	102	127	999
138	128	120	137	153

Means				
133	123.111	124	135.6	140.333
S.D.				
10.635	12.594	10.022	7.397	14.855
N				
10	9	10	10	6

Raw Stroop Word Scores		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
152	150	137	150	999
145	152	132	144	153
118	125	115	132	999
111	132	118	128	136
117	116	106	118	125
117	108	114	122	999
152	144	145	151	144
146	137	138	145	999
115	120	111	119	120
140	136	135	145	151

Means				
131.3	132	125.1	135.4	138.167
S.D.				
16.997	14.659	13.699	13.049	13.615
N				
10	10	10	10	6

Raw Stroop Word Scores		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
148	150	140	166	999
999	999	999	999	999
113	111	107	122	115
144	122	121	144	999
120	121	110	120	120
116	111	121	122	999
138	139	142	143	144
140	131	112	140	999
118	120	118	120	110
147	132	999	154	147

Means				
131.556	126.333	121.375	136.778	127.2
S.D.				
14.492	12.903	13.136	16.776	17.108
N				
9	9	8	9	5

Raw Stroop Word Scores		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
156	148	150	166	158
144	133	136	140	999
111	110	115	116	114
144	128	136	128	127
120	114	116	112	999
120	111	112	123	124
153	153	150	155	999
141	129	137	136	148
114	114	112	129	999
140	135	127	144	999

Means				
134.3	127.5	129.1	134.9	134.2
S.D.				
16.499	15.284	14.873	16.954	18.171
N				
10	10	10	10	5

Raw Stroop Word Scores		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
999	999	999	999	999
999	128	999	141	133
118	116	112	120	999
142	142	136	140	145
128	115	109	126	999
127	112	107	122	115
144	129	141	150	999
150	127	113	153	148
119	91	66	124	999
148	137	73	149	999

Means				
134.5	121.889	107.125	136.111	135.25
S.D.				
12.984	15.333	26.454	13.186	14.975
N				
8	9	8	9	4

Stroop Word T Scores		Placebo		
999	66	999	64	73
63	63	61	70	999
52	56	51	58	56
65	61	63	68	999
57	55	55	56	59
56	55	51	54	999
74	65	69	71	67
67	66	64	70	999
47	46	49	53	50
71	68	72	63	69
Means				
61.333	60.1	59.444	62.7	62.333
S.D.				
8.958	6.935	8.338	7.009	8.756
N				
9	10	9	10	6

Stroop Word T Scores		600mg/70kg 2-PAM Cl		
75	76	77	71	999
70	54	62	56	71
62	61	63	61	999
69	70	65	66	67
56	56	54	59	999
52	53	51	51	55
67	69	68	68	71
63	66	69	68	999
54	56	55	56	57
71	62	68	72	999
Means				
63.9	62.3	63.2	62.8	64.2
S.D.				
7.838	7.761	7.997	7.193	7.694
N				
10	10	10	10	5

Stroop Word T Scores		1200mg/70kg 2-PAM Cl		
72	69	76	65	69
73	59	64	68	999
57	55	54	56	64
70	62	65	62	999
48	53	49	54	54
54	51	54	54	48
71	72	71	70	999
66	64	70	64	65
54	54	49	59	999
67	60	66	66	66
Means				
63.2	59.9	61.8	61.8	61
S.D.				
9.077	6.967	9.636	5.789	8.149
N				
10	10	10	10	6

Stroop Word T Scores	2mg/70kg Atropine			
65	67	64	66	999
68	57	63	66	66
56	58	59	59	999
66	68	66	63	68
56	56	56	58	999
55	52	55	57	58
69	64	68	69	999
57	54	57	61	64
51	49	51	57	56
64	66	69	65	999

Means				
60.7	59.1	60.8	62.1	62.4
S.D.				
6.36	6.724	6.07	4.306	5.177
N				
10	10	10	10	5

Stroop Word T Scores	4mg/70kg Atropine			
66	64	66	67	74
70	56	59	69	999
58	48	61	63	61
67	68	57	65	999
60	54	56	59	55
58	60	61	61	999
64	58	63	69	70
66	999	56	63	66
53	52	47	60	999
65	60	56	65	73

Means				
62.7	57.778	58.2	64.1	66.5
S.D.				
5.229	6.119	5.181	3.542	7.396
N				
10	9	10	10	6

Stroop Word T Scores	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
72	71	65	71	999
69	72	62	68	73
55	59	54	62	999
52	62	55	60	64
55	54	49	55	59
55	50	53	57	999
72	68	69	72	68
69	65	65	69	999
54	56	52	56	56
66	64	64	69	72

Means				
61.9	62.1	58.8	63.9	65.333
S.D.				
8.333	7.325	6.925	6.607	6.919
N				
10	10	10	10	6

Stroop Word T Scores	4mg/70kg Atropine	600mg/70kg 2-PAM Cl
70	71	66
999	999	79
53	52	999
68	57	57
56	57	54
54	52	68
65	66	999
66	62	56
55	56	57
70	62	68
		999
		51
		70

Means				
61.889	59.444	56.875	64.444	59.8
S.D.				
7.236	6.366	6.49	8.413	8.614
N				
9	9	8	9	5

Stroop Word T Scores	2mg/70kg Atropine	1200mg/70kg 2-PAM Cl
74	70	71
68	63	79
52	51	66
68	60	999
56	53	54
56	52	53
73	73	60
67	61	60
53	53	52
66	64	999
		58
		74
		999
		70
		999
		999

Means				
63.3	60	60.7	63.6	63.2
S.D.				
8.26	7.732	7.409	8.488	9.039
N				
10	10	10	10	5

Stroop Word T Scores	4mg/70kg Atropine	1200mg/70kg 2-PAM Cl
999	999	999
999	60	999
55	54	67
67	67	63
60	54	999
60	52	56
68	61	66
71	60	69
56	42	999
70	65	54
		57
		71
		999
		70
		999
		999

Means				
63.375	57.222	49.875	64.222	64
S.D.				
6.368	7.629	13.25	6.76	7.348
N				
8	9	8	9	4

Raw Stroop Color Word Scores	Placebo			
999	38	999	51	59
70	64	60	58	999
74	75	76	80	83
82	75	84	82	999
75	70	70	72	73
70	64	60	69	999
106	99	102	109	108
91	99	94	100	999
60	57	57	65	65
81	80	82	79	85
Means				
78.778	72.1	76.111	76.5	78.833
S.D.				
13.461	18.418	15.846	17.822	17.463
N				
9	10	9	10	6

Raw Stroop Color Word Scores	600mg/70kg 2-PAM Cl			
66	61	63	60	999
87	83	75	94	100
86	84	84	76	999
106	113	118	118	118
80	73	68	82	999
36	35	40	43	37
70	55	71	66	73
72	77	76	75	999
67	65	67	71	80
80	72	85	91	999
Means				
75	71.8	74.7	77.6	81.6
S.D.				
18.184	20.547	19.799	20.533	30.534
N				
10	10	10	10	5

Raw Stroop Color Word Scores	1200mg/70kg 2-PAM Cl			
61	63	62	62	53
99	81	77	102	999
78	93	76	76	98
126	120	112	120	999
56	60	58	56	65
40	50	56	53	53
87	81	81	82	999
78	83	83	93	72
75	71	60	72	999
65	27	68	66	72
Means				
76.5	72.9	73.3	78.2	68.833
S.D.				
24.034	25.287	16.793	21.421	16.654
N				
10	10	10	10	6

Raw Stroop Color Word Scores			2mg/70kg Atropine	
59	57	63	78	999
77	72	72	79	89
75	80	76	83	999
84	81	81	89	97
75	78	69	79	999
70	73	65	69	70
92	73	101	110	999
60	56	67	66	68
56	63	59	71	62
80	84	95	74	999

Means				
72.8	71.7	74.8	79.8	77.2
S.D.				
11.631	9.934	13.831	12.603	14.99
N				
10	10	10	10	5

Raw Stroop Color Word Scores			4mg/70kg Atropine	
56	56	50	56	66
90	61	72	90	999
72	71	76	79	58
100	91	97	107	999
80	68	71	79	73
60	74	72	76	999
48	45	49	60	64
72	999	63	72	73
64	68	67	65	999
84	82	62	81	82

Means				
72.6	68.444	67.9	76.5	69.333
S.D.				
16.167	13.648	13.715	14.872	8.43
N				
10	9	10	10	6

Raw Stroop Color Word Scores			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
63	59	63	62	999
101	104	94	111	111
79	78	100	101	999
60	58	59	62	68
64	64	59	65	63
53	51	54	57	999
76	84	77	97	90
87	74	76	92	999
67	68	68	77	69
65	68	75	70	67

Means				
71.5	70.8	72.5	79.4	78
S.D.				
14.347	15.259	15.182	19.271	18.762
N				
10	10	10	10	6

Raw Stroop Color Word Scores 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

69	64	58	65	999
999	999	999	999	999
52	56	55	68	66
75	72	68	83	999
71	73	67	69	64
52	59	60	66	999
79	84	93	100	95
89	79	74	80	999
72	69	69	61	65
78	76	999	80	55

Means

70.778	70.222	68	74.667	69
S.D.				
12.143	9.217	11.928	12.247	15.182
N				
9	9	8	9	5

Raw Stroop Color Word Scores 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

62	63	60	67	65
98	96	94	110	999
46	50	52	60	57
67	73	73	80	70
67	65	65	72	999
52	50	50	60	53
95	87	69	96	999
76	80	86	89	89
75	72	70	66	999
71	68	77	82	999

Means

70.9	70.4	69.6	78.2	66.8
S.D.				
16.482	14.736	13.898	16.457	14.078
N				
10	10	10	10	5

Raw Stroop Color Word Scores 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

999	999	999	999	999
999	47	999	63	69
72	61	63	63	999
86	75	82	81	80
72	67	73	76	999
62	61	60	65	64
97	82	79	103	999
84	72	68	92	99
71	62	70	74	999
78	76	56	80	999

Means

77.75	67	68.875	77.444	78
S.D.				
10.938	10.559	9.047	13.556	15.513
N				
8	9	8	9	4

Stroop Color Word T Scores		Placebo		
999	43	999	56	64
75	69	65	63	999
79	80	81	85	88
87	80	89	87	999
80	75	75	77	78
75	69	65	74	999
111	104	107	114	113
96	104	99	105	999
65	62	62	70	70
86	85	87	84	90
Means				
83.778	77.1	81.111	81.5	83.833
S.D.				
13.461	18.418	15.846	17.822	17.463
N				
9	10	9	10	6

Stroop Color Word T Scores		600mg/70kg 2-PAM Cl		
71	66	68	65	999
92	88	80	99	105
91	89	89	81	999
111	118	123	123	123
85	78	73	87	999
41	40	45	48	42
75	60	76	71	78
77	82	81	80	999
72	70	72	76	85
85	77	90	96	999
Means				
80	76.8	79.7	82.6	86.6
S.D.				
18.184	20.547	19.799	20.533	30.534
N				
10	10	10	10	5

Stroop Color Word T Scores		1200mg/70kg 2-PAM Cl		
66	68	67	67	58
104	86	82	107	999
83	98	81	81	103
131	125	117	125	999
61	65	63	61	70
45	55	61	58	58
92	86	86	87	999
83	88	88	98	77
80	76	65	77	999
70	32	73	71	77
Means				
81.5	77.9	78.3	83.2	73.833
S.D.				
24.034	25.287	16.793	21.421	16.654
N				
10	10	10	10	6

Stroop Color Word T Scores	2mg/70kg Atropine			
64	62	68	83	999
82	77	77	84	94
80	85	81	88	999
89	86	86	94	102
80	83	74	84	999
75	78	70	74	75
97	78	106	115	999
65	61	72	71	73
61	68	64	76	67
85	89	100	79	999

Means				
77.8	76.7	79.8	84.8	82.2
S.D.				
11.631	9.934	13.831	12.603	14.99
N				
10	10	10	10	5

Stroop Color Word T Scores	4mg/70kg Atropine			
61	61	55	61	71
95	66	77	95	999
77	76	81	84	63
105	96	102	112	999
85	73	76	84	78
65	79	77	81	999
53	50	54	65	69
77	999	68	77	78
69	73	72	70	999
89	87	67	86	87

Means				
77.6	73.444	72.9	81.5	74.333
S.D.				
16.167	13.648	13.715	14.872	8.43
N				
10	9	10	10	6

Stroop Color Word T Scores	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
68	64	68	67	999
106	109	99	116	116
84	83	105	106	999
65	63	64	67	73
69	69	64	70	68
58	56	59	62	999
81	89	82	102	95
92	79	81	97	999
72	73	73	82	74
70	73	80	75	72

Means				
76.5	75.8	77.5	84.4	83
S.D.				
14.347	15.259	15.182	19.271	18.762
N				
10	10	10	10	6

Stroop Color Word T Scores 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
74	69	63	70	999
999	999	999	999	999
57	61	60	73	71
80	77	73	88	999
76	78	72	74	69
57	64	65	71	999
84	89	98	105	100
94	84	79	85	999
77	74	74	66	70
83	81	999	85	60

Means				
75.778	75.222	73	79.667	74
S.D.				
12.143	9.217	11.928	12.247	15.182
N				
9	9	8	9	5

Stroop Color Word T Scores 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
67	68	65	72	70
103	101	99	115	999
51	55	57	65	62
72	78	78	85	75
72	70	70	77	999
57	55	55	65	58
100	92	74	101	999
81	85	91	94	94
80	77	75	71	999
76	73	82	87	999

Means				
75.9	75.4	74.6	83.2	71.8
S.D.				
16.482	14.736	13.898	16.457	14.078
N				
10	10	10	10	5

Stroop Color Word T Scores 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
999	999	999	999	999
999	52	999	68	74
77	66	68	68	999
91	80	87	86	85
77	72	78	81	999
67	66	65	70	69
102	87	84	108	999
89	77	73	97	104
76	67	75	79	999
83	81	61	85	999

Means				
82.75	72	73.875	82.444	83
S.D.				
10.938	10.559	9.047	13.556	15.513
N				
8	9	8	9	4

Stroop Raw Interference Scores			Placebo	
999	-18	999	-4	1
10	6	6	5	999
22	20	27	25	30
24	21	26	23	999
21	20	20	21	22
18	12	13	18	999
38	37	38	41	43
32	39	36	37	999
17	14	13	19	18
20	22	19	22	25
Means				
22.444	17.3	22	20.7	23.167
S.D.				
8.278	16.063	10.747	13.208	13.877
N				
9	10	9	10	6

Stroop Raw Interference Scores			600mg/70kg 2-PAM Cl	
10	3	1	2	999
21	28	15	36	33
28	27	25	19	999
43	47	55	56	52
30	21	17	26	999
-8	-12	-5	-1	-10
11	-3	12	10	11
16	21	19	17	999
17	15	20	20	31
20	18	28	31	999
Means				
18.8	16.5	18.7	21.6	23.4
S.D.				
13.62	16.972	16.269	16.86	23.65
N				
10	10	10	10	5

Stroop Raw Interference Scores			1200mg/70kg 2-PAM Cl	
9	10	10	11	-1
29	21	15	40	999
26	39	23	22	37
59	57	49	58	999
11	14	15	7	20
-6	4	10	5	7
27	20	19	19	999
24	30	28	38	21
27	23	14	22	999
12	-25	12	9	14
Means				
21.8	19.3	19.5	23.1	16.333
S.D.				
17.197	21.736	11.844	17.246	13.079
N				
10	10	10	10	6

Stroop Raw	Interference	Scores	2mg/70kg	Atropine	
6	5	15	15	999	
14	15	13	20	27	
23	27	22	25	999	
26	21	21	31	36	
24	26	18	25	999	
19	24	13	14	15	
26	12	36	43	999	
11	8	18	14	13	
10	18	14	23	12	
23	28	38	14	999	
Means					
18.2	18.4	20.8	22.4	20.6	
S.D.					
7.361	8.181	9.102	9.336	10.502	
N					
10	10	10	10	5	

Stroop Raw	Interference	Scores	4mg/70kg	Atropine	
5	5	-3	4	8	
26	6	16	26	999	
18	20	21	20	-1	
39	31	40	46	999	
27	17	20	25	21	
9	19	16	17	999	
-6	-4	-2	2	7	
16	999	15	19	17	
17	21	23	13	999	
26	32	13	20	22	
Means					
17.7	16.333	15.9	19.2	12.333	
S.D.					
12.824	12	12.297	12.336	9.114	
N					
10	9	10	10	6	

Stroop Raw	Interference	Scores	2mg/70kg	Atropine & 600mg/70kg 2-PAM Cl	
10	2	10	8	999	
34	36	32	46	41	
25	21	42	39	999	
10	6	9	8	14	
16	17	15	16	14	
5	4	6	7	999	
14	25	17	33	29	
35	22	19	30	999	
19	18	22	27	19	
12	13	22	9	7	
Means					
18	16.4	19.4	22.3	20.667	
S.D.					
10.263	10.511	10.977	14.515	12.34	
N					
10	10	10	10	6	

Stroop Raw	Interference Scores	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
12	8	9
999	999	999
5	11	10
15	20	17
20	22	20
3	13	11
17	24	34
31	27	27
24	20	24
19	23	999

Means		
16.222	18.667	19
S.D.		
8.814	6.481	8.976
N		
9	9	8

Stroop Raw	Interference Scores	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
9	11	8
32	35	31
-2	3	8
9	18	17
17	17	17
3	5	4
29	25	8
19	25	30
28	25	25
17	12	22

Means		
16.1	17.6	17
S.D.		
11.406	10.08	9.809
N		
10	10	10

Stroop Raw	Interference Scores	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
999	999	999
999	-8	999
20	9	14
24	15	22
18	17	27
11	14	14
32	23	18
22	21	17
22	19	34
16	19	19

Means		
20.625	14.333	20.625
S.D.		
6.163	9.341	6.886
N		
9	9	8

Stroop Interference T Scores		Placebo		
999	32	999	46	51
60	56	56	55	999
72	70	77	75	80
74	71	76	73	999
71	70	70	71	72
68	62	63	68	999
88	87	88	91	93
82	89	86	87	999
67	64	63	69	68
70	72	69	72	75
Means				
72.444	67.3	72	70.7	73.167
S.D.				
8.278	16.063	10.747	13.208	13.877
N				
9	10	9	10	6

Stroop Interference T Scores		600mg/70kg 2-PAM Cl		
60	53	51	52	999
71	78	65	86	83
78	77	75	69	999
93	97	105	106	102
80	71	67	76	999
42	38	45	49	40
61	47	62	60	61
66	71	69	67	999
67	65	70	70	81
70	68	78	81	999
Means				
68.8	66.5	68.7	71.6	73.4
S.D.				
13.62	16.972	16.269	16.86	23.65
N				
10	10	10	10	5

Stroop Interference T Scores		1200mg/70kg 2-PAM Cl		
59	60	60	61	49
79	71	65	90	999
76	89	73	72	87
109	107	99	108	999
61	64	65	57	70
44	54	60	55	57
77	70	69	69	999
74	80	78	88	71
77	73	64	72	999
62	25	62	59	64
Means				
71.8	69.3	69.5	73.1	66.333
S.D.				
17.197	21.736	11.844	17.246	13.079
N				
10	10	10	10	6

Stroop Interference T Scores 2mg/70kg Atropine				
56	55	65	65	999
64	65	63	70	77
73	77	72	75	999
76	71	71	81	86
74	76	68	75	999
69	74	63	64	65
76	62	86	93	999
61	58	68	64	63
60	68	64	73	62
73	78	88	64	999
Means				
68.2	68.4	70.8	72.4	70.6
S.D.				
7.361	8.181	9.102	9.336	10.502
N				
10	10	10	10	5

Stroop Interference T Scores 4mg/70kg Atropine				
55	55	47	54	58
76	56	66	76	999
68	70	71	70	49
89	81	90	96	999
77	67	70	75	71
59	69	66	67	999
44	46	48	52	57
66	999	65	69	67
67	71	73	63	999
76	82	63	70	72
Means				
67.7	66.333	65.9	69.2	62.333
S.D.				
12.824	12	12.297	12.336	9.114
N				
10	9	10	10	6

Stroop Interference T Scores 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
60	52	60	58	999
84	86	82	96	91
75	71	92	89	999
60	56	59	58	64
66	67	65	66	64
55	54	56	57	999
64	75	67	83	79
85	72	69	80	999
69	68	72	77	69
62	63	72	59	57
Means				
68	66.4	69.4	72.3	70.667
S.D.				
10.263	10.511	10.977	14.515	12.34
N				
10	10	10	10	6

Stroop Interference T Scores 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

62	58	59	54	999
999	999	999	999	999
55	61	60	69	65
65	70	67	73	999
70	72	70	66	64
53	63	61	62	999
67	74	84	86	80
81	77	77	72	999
74	70	74	61	67
69	73	999	67	47

Means				
66.222	68.667	69	67.778	64.6
S.D.				
8.814	6.481	8.976	9.025	11.76
N				
9	9	8	9	5

Stroop Interference T Scores 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

59	61	58	61	58
82	85	81	96	999
48	53	58	58	60
59	68	67	76	69
67	67	67	75	999
53	55	54	57	52
79	75	58	79	999
69	75	80	81	83
78	75	75	62	999
67	62	72	73	999

Means				
66.1	67.6	67	71.8	64.4
S.D.				
11.406	10.08	9.809	12.354	12.054
N				
10	10	10	10	5

Stroop Interference T Scores 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

999	999	999	999	999
999	42	999	51	59
70	59	64	61	999
74	65	72	75	69
68	67	77	72	999
61	64	64	66	63
82	73	68	85	999
72	71	67	83	90
72	69	84	75	999
66	69	69	70	999

Means				
70.625	64.333	70.625	70.889	70.25
S.D.				
6.163	9.341	6.886	10.6	13.793
N				
8	9	8	9	4

Short Story Acquisition & Recall			Placebo
11	4	999	999
3	2	2	999
14	7	6	6
18	999	7	999
13	7	7	7
13	8	6	999
18	8	9	9
13	7	6	999
13	9	9	9
15	9	10	10
Means			
13.1	6.778	6.889	8.2
S.D.			
4.202	2.333	2.369	1.643
N			
10	9	9	5

Short Story Acquisition & Recall			600mg/70kg 2-PAM Cl
8	3	3	999
2	2	1	2
15	9	10	999
17	9	8	9
13	7	6	999
13	6	5	4
16	8	7	6
7	3	2	999
13	6	6	6
11	7	5	999
Means			
11.5	6	5.3	5.4
S.D.			
4.625	2.539	2.751	2.608
N			
10	10	10	5

Short Story Acquisition & Recall			1200mg/70kg 2-PAM Cl
9	5	4	3
7	2	0	999
15	9	9	9
14	8	8	999
13	7	6	7
12	5	2	4
17	8	7	999
14	7	6	6
8	4	1	999
14	9	9	10
Means			
12.3	6.4	5.2	6.5
S.D.			
3.268	2.319	3.293	2.739
N			
10	10	10	6

Short Story Acquisition & Recall 2mg/70kg Atropine

5	3	3	999
9	5	1	0
17	9	5	999
17	9	7	9
11	5	4	999
10	6	4	3
12	7	5	999
14	9	6	6
15	9	6	5
15	8	6	999

Means

12.5	7	4.7	4.6
------	---	-----	-----

S.D.

3.837	2.16	1.767	3.362
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N

10	10	10	5
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Short Story Acquisition & Recall 4mg/70kg Atropine

8	5	5	4
13	9	1	999
16	10	1	1
16	7	7	999
10	5	6	5
7	4	2	999
10	6	6	7
7	3	0	0
10	5	3	999
4	2	3	2

Means

10.1	5.6	3.4	3.167
------	-----	-----	-------

S.D.

3.929	2.503	2.459	2.639
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N

10	10	10	6
----	----	----	---

Short Story Acquisition & Recall 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

7	4	2	999
8	8	7	4
14	7	7	999
13	6	6	6
8	5	5	5
11	7	4	999
10	6	5	6
15	7	4	999
20	10	8	7
3	2	2	2

Means

10.9	6.2	5	5
------	-----	---	---

S.D.

4.818	2.201	2.055	1.789
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N

10	10	10	6
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Short Story Acquisition & Recall			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
8	3	4	999
999	999	999	999
13	8	8	9
10	7	1	999
10	5	1	1
13	6	6	999
15	10	8	7
11	5	3	999
10	5	5	5
8	5	1	1

Means			
10.889	6	4.111	4.6
S.D.			
2.369	2.062	2.848	3.578
N			
9	9	9	5

Short Story Acquisition & Recall			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
9	5	5	4
10	7	5	999
10	7	6	5
11	7	7	7
13	8	7	999
10	6	0	0
17	8	7	999
15	10	6	5
13	8	8	999
8	6	6	999

Means			
11.6	7.2	5.7	4.2
S.D.			
2.836	1.398	2.214	2.588
N			
10	10	10	5

Short Story Acquisition & Recall			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
999	999	999	999
5	1	999	999
8	6	2	999
10	6	7	7
12	6	6	999
11	4	4	4
13	10	8	999
5	2	0	0
15	7	3	999
2	1	0	999

Means			
9	4.778	3.75	3.667
S.D.			
4.301	3.032	3.059	3.512
N			
9	9	8	3

Five Item Acquisition & Recall		Placebo
15	5	3
13	5	2
15	5	5
15	5	5
15	4	4
15	5	3
15	2	1
15	5	5
12	4	5
15	5	5

Means			
14.5	4.5	3.8	3.833
S.D.			
1.08	.972	1.476	1.602
N			
10	10	10	6

Five Item Acquisition & Recall		600mg/70kg 2-PAM Cl
12	5	5
15	5	1
15	5	5
15	5	5
15	5	1
11	3	1
15	5	4
15	4	4
14	5	4
15	4	5

Means			
14.2	4.6	3.5	2.8
S.D.			
1.476	.699	1.78	1.789
N			
10	10	10	5

Five Item Acquisition & Recall		1200mg/70kg 2-PAM Cl
15	4	3
14	3	0
15	5	4
15	5	5
15	5	4
15	5	2
15	4	0
15	5	5
13	5	3
14	5	5

Means			
14.6	4.6	3.1	3.667
S.D.			
N			
10	10	10	6

Five Item Acquisition & Recall		2mg/70kg	Atropine
14	3	3	999
13	5	2	2
15	5	5	999
15	5	3	4
15	5	3	999
15	5	0	0
15	5	5	999
15	5	4	3
14	5	3	3
12	2	1	999

Means			
14.3	4.5	2.9	2.4
S.D.			
1.059	1.08	1.595	1.517
N			
10	10	10	5

Five Item Acquisition & Recall		4mg/70kg	Atropine
999	5	5	5
14	4	2	999
15	5	3	3
15	5	5	999
15	4	2	1
13	5	1	999
11	5	4	4
14	4	3	3
13	5	3	999
15	5	4	4

Means			
13.889	4.7	3.2	3.333
S.D.			
1.364	.483	1.317	1.366
N			
9	10	10	6

Five Item Acquisition & Recall		2mg/70kg	Atropine & 600mg/70kg 2-PAM Cl
15	4	3	999
14	4	2	2
15	5	5	999
15	5	4	4
14	5	2	3
15	5	0	999
15	5	3	3
14	5	4	999
15	5	2	3
8	3	1	1

Means			
14	4.6	2.6	2.667
S.D.			
2.16	.699	1.506	1.033
N			
10	10	10	6

Five Item Acquisition & Recall			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
11	4	2	999
999	999	999	999
15	4	5	5
15	5	5	999
15	5	2	3
15	5	0	999
14	4	1	2
15	5	3	999
12	5	4	4
14	5	4	3

Means			
14	4.667	2.889	3.4
S.D.			
1.5	.5	1.764	1.14
N			
9	9	9	5

Five Item Acquisition & Recall			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
13	5	3	3
14	5	2	999
15	4	4	4
15	5	5	5
15	5	3	999
12	4	1	1
15	5	4	999
14	5	3	2
15	4	0	999
15	5	5	999

Means			
14.3	4.7	3	3
S.D.			
1.059	.483	1.633	1.581
N			
10	10	10	5

Five Item Acquisition & Recall			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
999	999	999	999
14	5	2	2
15	5	4	999
15	5	5	5
15	5	1	999
15	4	1	1
15	5	3	999
14	5	2	2
11	4	4	999
13	3	0	999

Means			
14.111	4.556	2.444	2.5
S.D.			
1.364	.726	1.667	1.732
N			
9	9	9	4

Controlled Oral Word Assoc. Placebo

15	6
17	10
17	12
20	21
21	20
19	13
22	21
19	13
21	17
23	18

Means

19.4	15.1
------	------

S.D.

2.503	5.087
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N

10	10
----	----

Controlled Oral Word Assoc. 600mg/70kg 2-PAM Cl

21	20
11	14
18	13
21	19
18	22
19	10
18	21
18	9
20	18
18	18

Means

18.2	16.4
------	------

S.D.

2.821	4.6
-------	-----

N

10	10
----	----

Controlled Oral Word Assoc. 1200mg/70kg 2-PAM Cl

18	18
15	8
14	14
22	26
18	21
17	14
15	15
20	18
18	18
16	20

Means

17.3	17.2
------	------

S.D.

2.452	4.849
-------	-------

N

10	10
----	----

Controlled Oral Word Assoc. 2mg/70kg Atropine

17	22
16	10
17	14
21	18
18	25
20	20
25	23
19	16
21	17
22	19

Means

19.6	18.4
------	------

S.D.

2.757	4.452
-------	-------

N

10	10
----	----

Controlled Oral Word Assoc. 4mg/70kg Atropine

21	15
10	15
13	19
20	25
24	22
21	24
19	15
17	17
19	17
23	23

Means

18.7	19.2
------	------

S.D.

4.347	3.967
-------	-------

N

10	10
----	----

Controlled Oral Word Assoc. 2mg/70kg Atropine & 600mg/70kg 2-PAM Cl

21	17
13	13
18	16
22	24
17	19
15	15
18	18
14	17
19	16
23	18

Means

18	17.3
----	------

S.D.

3.367	2.908
-------	-------

N

10	10
----	----

Controlled Oral Word Assoc. 4mg/70kg Atropine & 600mg/70kg 2-PAM Cl

14	15
999	999
16	17
22	23
23	20
19	15
14	15
18	21
23	19
14	15

Means

18.111	17.778
--------	--------

S.D.

3.855	3.073
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N

9	9
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Controlled Oral Word Assoc. 2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

20	18
16	14
19	8
19	21
21	19
18	11
22	12
17	16
20	19
20	21

Means

19.2	15.9
------	------

S.D.

1.814	4.483
-------	-------

N

10	10
----	----

Controlled Oral Word Assoc. 4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl

999	999
20	11
18	15
21	22
28	16
23	16
19	21
15	14
17	13
20	12

Means

20.111	15.556
--------	--------

S.D.

3.756	3.779
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N

9	9
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Digit Span	Placebo	
6	4	10
6	4	10
9	7	16
9	8	17
9	6	15
9	8	17
8	7	15
8	5	13
8	4	12
7	5	12
Means		
7.9	5.8	13.7
S.D.		
1.197	1.619	2.669
N		
10	10	10

Digit Span	600mg/70kg 2-PAM Cl	
5	4	9
6	5	11
9	8	17
9	8	17
9	5	14
9	8	17
9	8	17
5	5	10
6	5	11
7	6	13
Means		
7.4	6.2	13.6
S.D.		
1.776	1.619	3.239
N		
10	10	10

Digit Span	1200mg/70kg 2-PAM Cl	
6	6	12
7	4	11
9	8	17
6	8	14
9	4	13
9	5	14
9	8	17
7	5	12
9	5	14
6	5	11
Means		
7.7	5.8	13.5
S.D.		
1.418	1.619	2.173
N		
10	10	10

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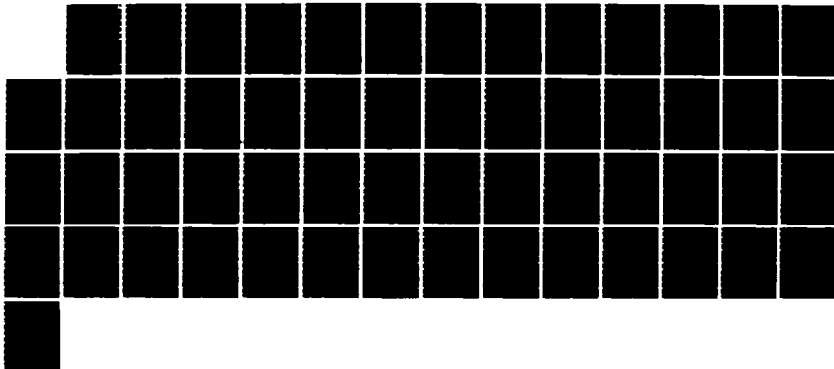
EFFECT OF ATROPINE AND 2-PAM CHLORIDE ON VISION AND
PERFORMANCE(U) MEDICAL RESEARCH INST OF SAN FRANCISCO
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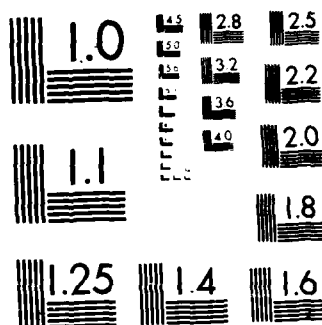
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

Digit Span	2mg/70kg Atropine	
6	4	10
4	4	8
9	6	15
9	8	17
9	7	16
9	8	17
9	8	17
6	4	10
8	4	12
6	6	12
Means		
7.5	5.9	13.4
S.D.		
1.841	1.792	3.406
N		
10	10	10

Digit Span	4mg/70kg Atropine	
6	2	8
6	4	10
9	8	17
9	8	17
8	5	13
9	7	16
8	6	14
6	4	10
7	6	13
7	5	12
Means		
7.5	5.5	13
S.D.		
1.269	1.9	3.091
N		
10	10	10

Digit Span	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
7	6	13
6	5	11
9	8	17
9	7	16
9	5	14
5	7	12
9	7	16
7	5	12
6	6	12
7	5	12
Means		
7.4	6.1	13.5
S.D.		
1.506	1.101	2.121
N		
10	10	10

Digit Span	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
6	5	11
999	999	999
9	7	16
7	8	15
8	5	13
9	6	15
9	7	16
6	5	11
7	4	11
5	6	11
Means		
7.333	5.889	13.222
S.D.		
1.5	1.269	2.279
N		
9	9	9

Digit Span	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
7	5	12
8	5	13
9	8	17
7	7	14
9	7	16
9	8	17
9	8	17
5	4	9
8	6	14
6	4	10
Means		
7.7	6.2	13.9
S.D.		
1.418	1.619	2.923
N		
10	10	10

Digit Span	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
999	999	999
7	4	11
8	5	13
7	7	14
8	8	16
9	8	17
9	8	17
5	5	10
7	6	13
7	4	11
Means		
7.444	6.111	13.556
S.D.		
1.236	1.691	2.651
N		
9	9	9

PASAT Raw #	# of Correct Responses	Placebo
34	32	35
23	19	15
59	48	48
60	58	47
59	59	57
52	43	33
60	60	60
48	45	40
40	37	25
57	52	37
Means		
49.2	45.3	39.7
S.D.		
12.9	13.166	13.881
N		
10	10	10

PASAT Raw #	# of Correct Responses	600mg/70kg 2-PAM Cl
51	37	44
25	16	15
59	55	54
60	60	59
60	60	60
28	14	15
59	55	49
47	39	36
53	49	48
56	52	39
Means		
49.8	43.7	41.9
S.D.		
13.02	16.997	16.155
N		
10	10	10

PASAT Raw #	# of Correct Responses	1200mg/70kg 2-PAM Cl
40	31	31
36	28	26
52	55	54
58	59	57
57	53	49
42	40	22
60	59	57
40	42	37
51	54	46
42	42	30
Means		
47.8	46.3	40.9
S.D.		
8.779	11.295	13.304
N		
10	10	10

PASAT Raw # of Correct Responses			2mg/70kg Atropine
43	32	43	30
17	26	14	12
52	60	54	30
59	58	54	44
58	59	57	50
56	51	36	25
60	60	60	49
35	32	29	20
40	37	25	17
55	53	49	33

Means			
47.5	46.8	42.1	31
S.D.			
13.786	13.522	15.509	13.225
N			
10	10	10	10

PASAT Raw # of Correct Responses			4mg/70kg Atropine
37	36	36	32
27	5.3	18	14
57	52	50	37
60	57	53	30
59	60	58	47
56	46	31	28
60	58	44	37
39	35	28	17
53	49	40	28
60	52	47	35

Means			
50.8	45.03	40.5	30.5
S.D.			
11.961	16.364	12.385	9.698
N			
10	10	10	10

PASAT Raw # of Correct Responses			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl
39	31	32	32
34	32	20	19
60	60	44	36
56	45	40	29
59	47	47	41
52	46	31	24
60	59	57	47
39	42	23	3
51	50	45	31
44	37	35	16

Means			
49.4	44.9	37.4	27.8
S.D.			
9.732	9.938	11.404	12.848
N			
10	10	10	10

PASAT Raw # of Correct Responses			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl
40	30	32	27
999	999	999	999
50	56	46	32
52	57	49	33
59	57	55	48
53	44	25	24
59	60	59	47
45	33	31	23
57	56	48	32
53	49	40	20

Means			
52	49.111	42.778	31.778
S.D.			
6.344	11.118	11.552	9.972
N			
9	9	9	9

PASAT Raw # of Correct Responses			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
32	31		
37	35	29	27
52	48	49	22
54	46	28	22
57	56	50	47
50	48	26	25
999	999	999	999
47	40	34	31
60	53	47	29
56	51	39	29

Means			
49.556	45.667	37.111	29.222
S.D.			
9.153	7.762	9.466	7.496
N			
9	9	9	9

PASAT Raw # of Correct Responses			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl
999	999	999	999
27	14	14	8
54	52	47	36
59	52	50	30
60	59	53	50
54	46	31	16
60	60	60	41
39	41	34	20
59	58	53	34
46	37	34	17

Means			
50.889	46.556	41.778	28
S.D.			
11.472	14.613	14.524	13.629
N			
9	9	9	9

PASAT Sec./Correct Response		Placebo	
34	32	35	20
23	19	15	8
59	48	48	28
60	58	47	37
59	59	57	52
52	43	33	22
60	60	60	53
48	45	40	31
40	37	25	17
57	52	37	24
Means			
49.2	45.3	39.7	29.2
S.D.			
12.9	13.166	13.881	14.582
N			
10	10	10	10

PASAT Sec./Correct Response		600mg/70kg	2-PAM Cl
51	37	44	31
25	16	15	13
59	55	54	39
60	60	59	43
60	60	60	50
28	14	15	16
59	55	49	33
47	39	36	30
53	49	48	30
56	52	39	40
Means			
49.8	43.7	41.9	32.5
S.D.			
13.02	16.997	16.155	11.462
N			
10	10	10	10

PASAT Sec./Correct Response		1200mg/70kg	2-PAM Cl
40	31	31	31
36	28	26	16
52	55	54	35
58	59	57	44
57	53	49	44
42	40	22	21
60	59	57	44
40	42	37	32
51	54	46	27
42	42	30	21
Means			
47.8	46.3	40.9	31.5
S.D.			
8.779	11.295	13.304	10.341
N			
10	10	10	10

PASAT Sec./Correct Response		2mg/70kg Atropine	
43	32	43	30
17	26	14	12
52	60	54	30
59	58	54	44
58	59	57	50
56	51	36	25
60	60	60	49
35	32	29	20
40	37	25	17
55	53	49	33

Means			
47.5	46.8	42.1	31
S.D.			
13.786	13.522	15.509	13.225
N			
10	10	10	10

PASAT Sec./Correct Response		4mg/70kg Atropine	
37	36	36	32
27	5.3	18	14
57	52	50	37
60	57	53	30
59	60	58	47
56	46	31	28
60	58	44	37
39	35	28	17
53	49	40	28
60	52	47	35

Means			
50.8	45.03	40.5	30.5
S.D.			
11.961	16.364	12.385	9.698
N			
10	10	10	10

PASAT Sec./Correct Response		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
39	31	32	32
34	32	20	19
60	60	44	36
56	45	40	29
59	47	47	41
52	46	31	24
60	59	57	47
39	42	23	3
51	50	45	31
44	37	35	16

Means			
49.4	44.9	37.4	27.8
S.D.			
9.732	9.938	11.404	12.848
N			
10	10	10	10

PASAT Sec./Correct Response		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl	
40	30	32	27
999	999	999	999
50	56	46	32
52	57	49	33
59	57	55	48
53	44	25	24
59	60	59	47
45	33	31	23
57	56	48	32
53	49	40	20

Means			
52	49.111	42.778	31.778
S.D.			
6.344	11.118	11.552	9.972
N			
9	9	9	9

PASAT Sec./Correct Response		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
33	34	32	31
37	35	29	27
52	48	49	22
54	46	28	22
57	56	50	47
50	48	26	25
999	999	999	999
47	40	34	31
60	53	47	29
56	51	39	29

Means			
49.556	45.667	37.111	29.222
S.D.			
9.153	7.762	9.466	7.496
N			
9	9	9	9

PASAT Sec./Correct Response		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl	
999	999	999	999
27	14	14	8
54	52	47	36
59	52	50	30
60	59	53	50
54	46	31	16
60	60	60	41
39	41	34	20
59	58	53	34
46	37	34	17

Means			
50.889	46.556	41.778	28
S.D.			
11.472	14.613	14.524	13.629
N			
9	9	9	9

Subjective DVA (1-5)	Placebo				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
1	1	1	1	1	1
3	999	3	3	3	999
1	1	1	1	1	1
1	1	1	1	1	999
3	3	4	5	3	3
1	1	1	1	1	1
Means					
2.2	2.111	2.3	2.4	2.2	2
S.D.					
1.033	1.054	1.16	1.35	1.033	1.095
N					
10	9	10	10	10	6
Subjective DVA (1-5)	600mg/70kg 2-PAM Cl				
3	3	3		3	999
3	3	3		3	3
3	3	3		3	999
3	3	3		3	3
1	1	1	1	1	999
3	3	3	999	3	3
1	999	1	1	1	1
1	1	1	1	1	999
3	3	3	4	3	3
1	1	1	1	1	999
Means					
2.2	2.333	2.2	2.222	2.2	2.6
S.D.					
1.033	1	1.033	1.202	1.033	.894
N					
10	9	10	9	10	5
Subjective DVA (1-5)	1200mg/70kg 2-PAM Cl				
3	4	4	4	3	4
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
1	2	1	1	1	1
3	3	3	3	3	3
1	1	1	1	1	999
1	1	1	1	1	1
3	3	4	4	3	999
1	1	1	1	1	1
Means					
2.2	2.4	2.4	2.4	2.111	2.167
S.D.					
1.033	1.075	1.265	1.265	1.054	1.329
N					
10	10	10	10	9	6

Subjective DVA (1-5)	2mg/70kg Atropine				
3	3	3	3	3	999
3	3	3	3	3	3
3	4	3	3	3	999
3	4	3	3	3	3
1	2	2	2	1	999
3	3	3	3	3	3
1	1	1	1	1	999
3	4	3	3	1	3
3	3	4	4	3	3
1	2	4	2	1	999

Means					
2.4	2.9	2.9	2.7	2.2	3
S.D.					
N					
10	10	10	10	10	5

Subjective DVA (1-5)	4mg/70kg Atropine				
3	2	4	4	3	3
3	4	3	3	4	999
3	3	3	3	3	3
3	4	4	4	3	999
1	2	2	2	1	1
3	3	3	4	3	999
1	2	3	2	1	1
1	3	3	3	1	1
3	5	4	4	3	999
1	3	5	5	1	1

Means					
2.2	3.1	3.4	3.4	2.3	1.667
S.D.					
1.033	.994	.843	.966	1.16	1.033
N					
10	10	10	10	10	6

Subjective DVA (1-5)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	4	999	3
3	3	3	3	3	999
3	4	3	3	3	3
999	2	2	2	1	1
3	3	3	3	3	999
1	2	2	2	1	1
1	1	1	1	1	999
3	3	3	4	3	3
1	1	1	1	1	1

Means					
2.333	2.5	2.4	2.6	2.111	2
S.D.					
1	.972	.843	1.075	1.054	1.095
N					
9	10	10	10	9	6

Subjective DVA (1-5)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	5	4	4	4	999
3	4	1	3	3	3
3	3	3	3	3	3
3	999	3	3	3	999
1	3	2	1	1	1
3	4	4	4	3	999
1	1	2	2	1	2
1	3	2	3	1	999
3	4	4	4	3	3
1	5	5	5	1	1

Means					
2.2	3.556	3	3.2	2.3	2.167
S.D.					
1.033	1.236	1.247	1.135	1.16	.983
N					
10	9	10	10	10	6

Subjective DVA (1-5)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	4	4	4	3	4
3	3	3	3	4	999
1	3	3	3	3	3
3	2	3	3	3	3
1	3	2	2	1	999
3	3	3	3	3	3
1	1	1	1	1	999
1	2	1	1	1	1
3	4	4	4	3	999
1	4	3	2	1	999

Means					
2	2.9	2.7	2.6	2.3	2.8
S.D.					
1.054	.994	1.059	1.075	1.16	1.095
N					
10	10	10	10	10	5

Subjective DVA (1-5)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	2	4	2	3	3
3	3	3	3	3	3
3	3	4	3	3	999
3	4	3	3	3	3
1	2	2	1	1	999
3	2	3	3	3	3
2	2	2	2	1	999
1	2	2	2	1	1
3	4	4	4	3	999
1	5	5	5	1	999

Means					
2.3	2.9	3.2	2.8	2.2	2.6
S.D.					
N					
10	10	10	10	10	5

Subjective NVA (1-5)	Placebo				
3	3	3	3	3	1
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
1	1	1	1	1	1
3	999	3	3	3	999
1	1	1	1	1	1
1	1	1	1	1	999
3	3	3	4	3	3
1	1	1	1	1	1

Means					
2.2	2.111	2.2	2.3	2.2	1.667
S.D.					
1.033	1.054	1.033	1.16	1.033	1.033
N					
10	9	10	10	10	6

Subjective NVA (1-5)	600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
1	1	1	1	1	999
3	3	3	999	3	3
1	999	1	1	1	1
1	1	1	1	1	999
3	3	3	3	3	3
1	1	1	1	1	999

Means					
2.2	2.333	2.2	2.111	2.2	2.6
S.D.					
1.033	1	1.033	1.054	1.033	.894
N					
10	9	10	9	10	5

Subjective NVA (1-5)	1200mg/70kg 2-PAM Cl				
4	4	4	4	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
2	3	1	2	1	2
3	3	3	3	3	3
1	1	1	1	1	999
1	1	1	1	1	1
3	3	3	4	3	999
1	1	1	1	1	1

Means					
2.4	2.5	2.3	2.5	2.111	2.167
S.D.					
1.075	1.08	1.16	1.179	1.054	.983
N					
10	10	10	10	9	6

Subjective	NVA (1-5)	2mg/70kg Atropine			
3	3	3	3	3	999
3	3	3	3	3	3
3	4	3	3	3	999
3	3	3	3	3	3
1	3	2	2	1	999
3	3	3	3	3	3
1	1	1	1	1	999
3	4	3	3	1	3
3	4	4	4	3	3
1	2	4	2	1	999

Means					
2.4	3	2.9	2.7	2.2	3
S.D.					
N					
10	10	10	10	10	5

Subjective	NVA (1-5)	4mg/70kg Atropine			
3	2	4	4	4	3
3	5	5	5	4	999
3	4	3	4	3	3
3	4	5	4	3	999
1	3	4	4	1	1
3	2	3	4	3	999
1	1	1	1	1	1
2	4	4	3	2	1
3	5	5	5	4	999
1	3	5	5	1	1

Means					
2.3	3.3	3.9	3.9	2.6	1.667
S.D.					
N					
10	10	10	10	10	6

Subjective	NVA (1-5)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	5	4	4	4	3
3	3	3	3	3	999
2	3	3	3	3	3
999	3	3	2	2	1
3	3	3	3	3	999
1	1	1	2	1	1
1	2	1	1	1	999
3	4	4	4	3	3
1	1	1	1	1	1

Means					
2.222	2.8	2.6	2.6	2.4	2
S.D.					
N					
9	10	10	10	10	6

Subjective NVA (1-5)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	5	4	4	4	999
3	4	5	5	4	3
3	3	3	3	3	3
3	999	4	4	3	999
1	5	4	3	1	1
3	4	4	4	3	999
1	1	1	2	1	1
1	3	2	3	1	999
3	4	4	4	3	3
1	5	5	5	2	1
Means					
2.2	3.778	3.6	3.7	2.5	2
S.D.					
1.033	1.302	1.265	.949	1.179	1.095
N					
10	9	10	10	10	6
Subjective NVA (1-5)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	4	4	4	3	3
3	3	4	4	4	999
1	3	3	3	3	3
3	4	3	3	3	3
1	3	2	2	1	999
3	3	3	3	3	3
1	1	1	1	1	999
1	2	2	1	1	1
3	5	4	4	3	999
1	5	5	4	1	999
Means					
2	3.3	3.1	2.9	2.3	2.6
S.D.					
1.054	1.252	1.197	1.197	1.16	.894
N					
10	10	10	10	10	5
Subjective NVA (1-5)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	2	4	2	4	2
3	5	5	5	5	4
3	3	5	4	3	999
3	4	4	3	3	3
1	5	4	2	2	999
3	1	2	2	3	3
1	1	2	2	1	999
1	3	4	3	1	1
3	5	5	5	4	999
1	5	5	5	1	999
Means					
2.2	3.4	4	3.3	2.7	2.6
S.D.					
1.033	1.647	1.155	1.337	1.418	1.14
N					
10	10	10	10	10	5

Subjective Fatigue (1-5)	Placebo				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	3	3	3	2	3
3	999	3	3	3	999
3	3	2	2	3	3
2	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
2.8	3	2.9	2.9	2.9	3
S.D.					
N					
10	9	10	10	10	6

Subjective Fatigue (1-5)	600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
2	999	2	2	3	2
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.9	3	2.9	2.889	3	2.8
S.D.					
N					
10	9	10	9	10	5

Subjective Fatigue (1-5)	1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	2	3	999
3	3	2	3	3	3
3	3	3	3	3	3
3	3	3	2	3	999
2	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
2.9	3	2.9	2.8	3	3
S.D.					
N					
10	10	10	10	9	6

Subjective Fatigue (1-5)		2mg/70kg Atropine			
3	2	3	3	3	999
3	3	3	3	3	3
3	2	2	2	3	999
3	3	3	2	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	2	2	3	3	3
3	3	3	3	3	3
3	2	3	3	3	999

Means					
3	2.5	2.8	2.8	3	3
S.D.					
0	.527	.422	.422	0	0
N					
10	10	10	10	10	5

Subjective Fatigue (1-5)		4mg/70kg Atropine			
3	2	2	2	3	3
3	3	3	3	3	999
3	2	2	3	3	3
3	1	2	2	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	1	2	2	4	4
3	2	2	2	3	3
3	3	3	3	3	999
3	2	2	2	2	3

Means					
3	2.2	2.4	2.5	3	3.167
S.D.					
0	.789	.516	.527	.471	.408
N					
10	10	10	10	10	6

Subjective Fatigue (1-5)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	2	3	999
4	3	2	3	3	3
3	2	3	3	3	3
3	3	3	3	3	999
3	3	3	2	4	3
3	2	2	2	2	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3.1	2.7	2.8	2.7	3	3
S.D.					
N					
10	10	10	10	10	6

Subjective Fatigue (1-5)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
3	3	3	2	3	999
3	3	3	3	3	3
3	2	2	2	3	3
3	999	3	3	3	999
3	3	2	2	2	3
3	3	3	3	3	999
2	2	3	2	3	3
3	2	2	2	2	999
3	3	3	3	3	3
2	2	3	3	2	2

Means					
2.8	2.556	2.7	2.5	2.7	2.833
S.D.					
N					
10	9	10	10	10	6

Subjective Fatigue (1-5)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	2	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	2	2	3	999
3	1	2	3	2	2
3	3	3	3	3	999
3	3	3	3	3	999

Means					
3	2.7	2.8	2.8	2.9	2.8
S.D.					
0	.675	.422	.422	.316	.447
N					
10	10	10	10	10	5

Subjective Fatigue (1-5)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	3	1	2	3	3
3	3	3	3	3	3
3	2	2	2	3	999
3	3	3	3	3	3
4	2	3	2	3	999
3	2	3	2	3	3
2	2	1	2	3	999
2	1	999	1	2	2
3	3	3	3	3	999
2	2	2	2	2	999

Means					
2.8	2.3	2.333	2.2	2.8	2.8
S.D.					
N					
10	10	9	10	10	5

Subjective Forgetfulness (1-5)			Placebo		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Forgetfulness (1-5)			600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	9	10	5

Subjective Forgetfulness (1-5)			1200mg/70kg 2-PAM Cl		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	10	10	10	9	6

Subjective Forgetfulness (1-5)			2mg/70kg Atropine		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	10	10	10	10	5

Subjective Forgetfulness (1-5)			4mg/70kg Atropine		
3	3	3	3	3	3
3	3	2	2	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
3	2.9	2.9	2.9	3	3
S.D.					
0	.316	.316	.316	0	0
N					
10	10	10	10	10	6

Subjective Forgetfulness (1-5)			2mg/70kg Atropine & 600mg/70kg 2-PAM		Cl
3	3	3	3	3	999
3	3	3	3	3	3
2	3	3	3	3	999
3	3	3	3	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
2.889	3	3	3	3	3
S.D.					
N					
9	10	10	10	10	6

Subjective Forgetfulness (1-5)	4mg/70kg Atropine & 600mg/70kg 2-PAM	C1
3	3	999
3	3	3
3	2	3
3	999	999
3	3	3
3	3	999
3	3	3
3	2	999
3	3	3
3	3	3

Means					
3	2.778	2.9	2.9	2.9	3
S.D.					
0	.441	.316	.316	.316	0
N					
10	9	10	10	10	6

Subjective Forgetfulness (1-5)	2mg/70kg Atropine & 1200mg/70kg 2-PAM	C1
3	3	3
3	2	999
3	3	3
3	3	3
3	3	999
3	3	3
3	3	999
3	2	3
3	3	999
3	3	999

Means					
3	2.8	2.9	2.9	3	3
S.D.					
0	.422	.316	.316	0	0
N					
10	10	10	10	10	5

Subjective Forgetfulness (1-5)	4mg/70kg Atropine & 1200mg/70kg 2-PAM	C1
3	3	3
3	2	3
2	3	999
3	3	3
3	3	999
3	3	3
3	3	999
3	2	3
3	3	999
3	3	999
3	3	999

Means					
2.9	2.8	2.8	2.6	2.9	3
S.D.					
N					
10	10	10	10	10	5

Subjective Mouth Dryness (1-5)			Placebo		
3	4	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
1	1	1	1	1	1
3	999	3	3	3	999
1	1	1	1	1	1
4	4	4	4	4	999
3	3	3	3	3	3
3	3	3	3	3	3
Means					
2.7	2.778	2.7	2.7	2.7	2.333
S.D.					
N					
10	9	10	10	10	6
Subjective Mouth Dryness (1-5)			600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	4	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
1	1	1	1	1	999
3	3	3	999	3	3
1	999	1	1	1	1
4	4	4	4	4	999
3	3	3	3	3	3
3	3	3	3	3	999
Means					
2.7	3	2.7	2.667	2.7	2.6
S.D.					
N					
10	9	10	9	10	5
Subjective Mouth Dryness (1-5)			1200mg/70kg 2-PAM Cl		
3	3	3	3	3	3
3	4	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
1	3	1	2	1	1
3	2	3	3	3	3
1	1	1	1	1	999
3	3	4	4	3	4
3	3	3	3	3	999
4	3	3	3	3	3
Means					
2.7	2.8	2.7	2.8	2.556	2.833
S.D.					
N					
10	10	10	10	9	6

Subjective	Mouth Dryness (1-5)	2mg/70kg Atropine			
3	4	3	3	3	999
3	3	4	4	3	3
3	5	4	3	3	999
3	4	3	3	3	2
1	4	2	3	1	999
3	2	2	2	3	3
1	5	3	1	1	999
4	5	4	4	3	3
3	4	4	4	3	3
3	4	4	4	3	999
Means					
2.7	4	3.3	3.1	2.6	2.8
S.D.					
N					
10	10	10	10	10	5

Subjective	Mouth Dryness (1-5)	4mg/70kg Atropine			
3	5	5	4	4	3
3	5	5	5	3	999
3	5	4	4	3	3
3	4	5	4	3	999
1	5	5	4	1	1
3	2	2	4	3	999
1	5	4	3	1	1
3	5	4	4	4	3
3	4	4	4	3	999
3	4	5	5	3	3
Means					
2.6	4.4	4.3	4.1	2.8	2.333
S.D.					
N					
10	10	10	10	10	6

Subjective	Mouth Dryness (1-5)	2mg/70kg Atropine & 600mg/70kg 2-PAM	Cl		
3	4	3	4	3	999
3	5	5	4	4	3
3	4	3	3	3	999
2	4	3	3	3	3
999	5	3	2	1	1
3	1	1	1	3	999
1	5	3	3	1	1
4	5	4	4	4	999
3	4	4	4	3	3
4	4	4	4	3	3
Means					
2.889	4.1	3.3	3.2	2.8	2.333
S.D.					
N					
9	10	10	10	10	6

Subjective Mouth Dryness (1-5)	4mg/70kg	Atropine & 600mg/70kg	2-PAM	Cl
3	5	4	3	999
3	5	4	3	3
3	5	4	3	3
3	999	4	3	999
1	5	4	1	1
3	4	4	3	999
1	5	3	1	1
4	5	5	4	999
3	4	4	3	3
3	5	5	4	3

Means				
2.7	4.778	4.1	4	2.8
S.D.				2.333
N				
10	9	10	10	6

Subjective Mouth Dryness (1-5)	2mg/70kg	Atropine & 1200mg/70kg	2-PAM	Cl
3	5	3	4	3
3	5	5	4	999
3	4	3	3	3
3	4	3	3	3
1	5	3	1	999
3	3	4	3	3
1	4	3	1	999
4	5	4	4	4
3	4	4	3	999
3	5	5	3	999

Means				
2.7	4.4	3.9	3.7	2.9
S.D.				3.2
N				
10	10	10	10	5

Subjective Mouth Dryness (1-5)	4mg/70kg	Atropine & 1200mg/70kg	2-PAM	Cl
3	5	4	4	4
3	5	5	4	3
3	4	4	3	999
3	4	3	3	3
1	4	4	1	999
3	2	2	3	3
1	3	4	1	999
4	5	5	5	3
3	4	4	3	999
3	5	5	3	999

Means				
2.7	4.1	4.1	3.9	3
S.D.				3.2
N				
10	10	10	10	5

Subjective Restlessness (1-5)			Placebo		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Restlessness (1-5)			600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
4	999	3	4	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3.1	3	3	3.111	3	3
S.D.					
N					
10	9	10	9	10	5

Subjective Restlessness (1-5)			1200mg/70kg 2-PAM Cl		
3	3	2	2	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
3	2	3	3	3	3
3	3	3	3	3	3
3	3	3	3	4	999
3	3	3	3	3	3
3	2	2	1	3	999
3	2	3	3	3	3

Means					
3	2.7	2.8	2.7	3.111	3
S.D.					
0	.483	.422	.675	.333	0
N					
10	10	10	10	9	6

Subjective Restlessness (1-5)			2mg/70kg Atropine		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	4	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	3.1	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
10	10	10	10	10	5

Subjective Restlessness (1-5)			4mg/70kg Atropine		
3	3	1	2	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	4	3	4	3	999
3	3	3	3	3	3
3	3	3	3	3	999
4	4	3	2	2	4
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	2	3	3

Means					
3.1	3.2	2.8	2.8	2.9	3.167
S.D.					
N					
10	10	10	10	10	6

Subjective Restlessness (1-5)			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	999	4	3	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	3	3	4	3	3
3	3	3	3	3	999
3	2	2	2	3	3
3	3	2	3	3	3

Means					
3	2.889	2.9	3	3	3
S.D.					
0	.333	.568	.471	0	0
N					
9	9	10	10	10	6

Subjective Restlessness (1-5)			4mg/70kg Atropine & 600mg/70kg 2-PAM	Cl
3	2	2	2	3
3	3	3	3	3
3	3	3	3	3
3	999	3	3	999
3	3	3	3	3
3	3	3	3	999
3	3	3	3	3
3	1	2	2	3
3	2	2	2	3
3	3	2	2	3

Means					
3	2.556	2.6	2.6	3	3
S.D.					
0	.726	.516	.516	0	0
N					
10	9	10	10	10	6

Subjective Restlessness (1-5)			2mg/70kg Atropine & 1200mg/70kg 2-PAM	Cl
3	3	3	3	3
3	3	2	3	3
3	3	3	3	999
3	3	2	2	3
3	3	3	3	3
3	3	3	3	999
3	3	3	3	3
3	3	3	3	999
3	3	3	3	3
3	2	2	2	3
3	1	2	2	3

Means					
3	2.7	2.6	2.7	3	3
S.D.					
0	.675	.516	.483	0	0
N					
10	10	10	10	10	5

Subjective Restlessness (1-5)			4mg/70kg Atropine & 1200mg/70kg 2-PAM	Cl
3	1	2	2	3
3	3	4	4	3
3	3	3	3	3
3	2	3	3	999
3	3	3	3	3
3	3	3	3	999
3	3	3	3	3
3	3	3	3	999
3	2	2	3	3
3	2	2	2	3
3	1	2	2	3

Means					
3	2.3	2.7	2.8	3	3
S.D.					
0	.823	.675	.632	0	0
N					
10	10	10	10	10	5

Subjective Skin Dryness (1-5)			Placebo		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	1	2	2	3	3
3	999	3	3	3	999
3	3	3	3	3	3
4	4	4	4	4	999
3	3	3	3	3	3
3	3	3	3	3	3
Means					
3	2.889	3	3	3.1	3
S.D.					
N					
10	9	10	10	10	6
Subjective Skin Dryness (1-5)			600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	4	3	3	3	3
3	3	3	3	3	999
3	3	3	3	2	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
4	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
Means					
3.1	3.111	3	3	2.9	3
S.D.					
N					
10	9	10	9	10	5
Subjective Skin Dryness (1-5)			1200mg/70kg 2-PAM Cl		
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
4	4	4	3	4	4
3	3	3	3	3	3
3	3	3	3	3	999
4	4	4	4	4	4
3	3	3	3	3	999
3	3	3	3	3	3
Means					
3.2	3.1	3.2	3.1	3.222	3.333
S.D.					
N					
10	10	10	10	9	6

Subjective Skin Dryness (1-5)			2mg/70kg Atropine		
3	3	3	3	3	999
3	3	3	3	3	3
3	5	4	3	3	999
3	4	4	2	3	3
1	3	3	3	3	999
3	3	2	2	3	3
3	3	3	3	3	999
4	5	4	4	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.9	3.5	3.2	2.9	3	3
S.D.					
N					
10	10	10	10	10	5

Subjective Skin Dryness (1-5)			4mg/70kg Atropine		
3	3	3	3	3	3
3	5	5	5	3	999
3	5	4	4	3	3
3	4	5	4	3	999
2	3	4	3	3	3
3	2	2	4	3	999
3	3	3	3	3	3
4	5	4	4	3	3
3	3	3	3	3	999
3	4	5	5	3	3

Means					
3	3.7	3.8	3.8	3	3
S.D.					
N					
10	10	10	10	10	6

Subjective Skin Dryness (1-5)			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	5	3	3	4	3
3	4	3	3	3	999
2	4	3	3	3	3
999	4	4	4	3	4
3	3	2	2	3	999
3	3	3	3	3	3
4	5	4	4	4	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3.7	3.1	3.1	3.2	3.167
S.D.					
N					
9	10	10	10	10	6

Subjective Skin Dryness (1-5)			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	5	4	4	3	3
3	5	4	4	3	3
3	999	4	4	3	999
3	4	4	4	4	3
3	4	4	4	3	999
3	3	3	3	3	3
4	5	5	5	4	999
3	3	3	3	3	3
3	3	4	4	3	3

Means					
3.1	3.889	3.8	3.8	3.2	3
S.D.					
N					
10	9	10	10	10	6

Subjective Skin Dryness (1-5)			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
3	3	3	3	3	3
3	5	2	2	2	999
3	4	3	3	3	3
3	4	4	4	3	4
4	4	4	4	3	999
3	3	4	4	3	3
3	3	3	3	3	999
4	5	4	4	4	4
3	3	3	3	3	999
3	3	4	4	3	999

Means					
3.2	3.7	3.4	3.4	3	3.4
S.D.					
N					
10	10	10	10	10	5

Subjective Skin Dryness (1-5)			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
3	3	3	3	3	3
3	5	5	5	4	3
3	4	4	4	3	999
3	4	4	4	3	3
3	3	3	4	4	999
3	2	2	2	3	3
3	3	3	3	3	999
4	5	5	5	5	4
3	3	3	3	3	999
3	4	4	4	3	999

Means					
3.1	3.6	3.6	3.7	3.4	3.2
S.D.					
N					
10	10	10	10	10	5

Subjective Tension (1-5)	Placebo				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Tension (1-5)	600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	9	10	5

Subjective Tension (1-5)	1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
3	2	2	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
3	2.9	2.9	3	3	3
S.D.					
0	.316	.316	0	0	0
N					
10	10	10	10	9	6

Subjective Tension (1-5)		2mg/70kg Atropine			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	10	10	10	10	5

Subjective Tension (1-5)		4mg/70kg Atropine			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	4	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
2.9	2.9	3	3	3.1	3
S.D.					
N					
10	10	10	10	10	6

Subjective Tension (1-5)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	2.9	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
9	10	10	10	10	6

Subjective Tension (1-5)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	2	3	3	3
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	1	2	2	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means

3	2.778	2.8	2.9	3	3
S.D.					
0	.667	.422	.316	0	0
N					
10	9	10	10	10	6

Subjective Tension (1-5)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	999
3	3	3	3	3	999

Means

3	2.9	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
10	10	10	10	10	5

Subjective Tension (1-5)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	2	2	2	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
4	3	3	3	3	999
3	2	3	3	3	3
3	3	3	3	3	999
3	2	2	3	3	3
3	2	3	3	3	999
3	3	3	3	3	999

Means

3.1	2.6	2.8	2.9	3	3
S.D.					
N					
10	10	10	10	10	5

Subjective Confusion (1-5)		Placebo			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Confusion (1-5)		600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	9	10	5

Subjective Confusion (1-5)		1200mg/70kg 2-PAM Cl			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	10	10	10	9	6

Subjective Confusion (1-5)		2mg/70kg Atropine			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	10	10	10	10	5

Subjective Confusion (1-5)		4mg/70kg Atropine			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
Means					
3	2.9	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
10	10	10	10	10	6

Subjective Confusion (1-5)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
9	10	10	10	10	6

Subjective Confusion (1-5)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	2	3	3	3
3	2	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
Means					
3	2.889	2.9	3	3	3
S.D.					
0	.333	.316	0	0	0
N					
10	9	10	10	10	6

Subjective Confusion (1-5)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
Means					
3	2.9	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
10	10	10	10	10	5

Subjective Confusion (1-5)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	2	2	3	3	3
3	2	3	2	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	2	3
3	3	3	3	3	999
3	3	3	3	3	999
Means					
3	2.7	2.9	2.9	2.9	3
S.D.					
0	.483	.316	.316	.316	0
N					
10	10	10	10	10	5

Subjective High (1-5)	Placebo				
1	1	1	1	1	1
1	1	1	1	1	999
1	1	1	1	1	1
1	1	1	1	1	999
1	1	1	1	1	1
1	999	1	1	1	999
1	1	1	1	1	1
2	2	2	2	2	999
3	3	3	3	3	3
1	1	1	1	1	1
Means					
1.3	1.333	1.3	1.3	1.3	1.333
S.D.					
N					
10	9	10	10	10	6

Subjective High (1-5)	600mg/70kg 2-PAM Cl				
1	3	3	1	1	999
1	1	1	1	1	1
1	1	1	1	1	999
1	1	1	1	1	1
1	1	1	1	1	999
1	3	1	999	1	1
1	999	1	1	1	1
2	2	2	2	2	999
3	3	3	3	3	3
1	1	1	1	1	999
Means					
1.3	1.77°	1.5	1.333	1.3	1.4
S.D.					
N					
10	9	10	9	10	5

Subjective High (1-5)	1200mg/70kg 2-PAM Cl				
1	4	3	1	3	1
1	2	1	1	1	999
1	1	1	1	999	1
1	1	1	1	1	999
1	2	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	999
2	2	2	2	2	2
3	3	3	3	3	999
1	1	1	1	1	1
Means					
1.3	1.8	1.5	1.3	1.556	1.167
S.D.					
N					
10	10	10	10	9	6

Subjective High (1-5)	2mg/70kg Atropine				
1	3	4	999	1	999
1	1	1	1	1	1
1	1	1	1	1	999
1	1	1	1	1	1
1	2	3	1	1	999
1	1	1	999	1	1
1	2	2	1	1	999
2	3	2	1	2	2
3	3	3	3	3	3
1	1	1	1	1	999
Means					
1.3	1.8	1.9	1.25	1.3	1.6
S.D.					
N					
10	10	10	8	10	5

Subjective High (1-5)	4mg/70kg Atropine				
1	5	5	4	1	3
1	3	4	4	1	999
1	1	1	1	3	1
1	2	2	1	1	999
1	2	2	1	1	1
1	1	1	1	1	999
1	3	2	1	1	1
2	3	2	2	2	2
3	4	3	4	3	999
1	1	1	1	1	1
Means					
1.3	2.5	2.3	2	1.5	1.5
S.D.					
N					
10	10	10	10	10	6

Subjective High (1-5)	2mg/70kg Atropine	& 600mg/70kg 2-PAM Cl			
3	1	3	4	1	999
1	3	2	2	1	1
1	1	1	1	1	999
1	1	1	1	1	1
999	2	1	1	1	1
1	1	1	1	1	999
1	2	2	1	1	1
2	2.5	2	2	2	999
3	4	4	3	3	3
1	1	1	1	1	1
Means					
1.556	1.85	1.8	1.7	1.3	1.333
S.D.					
N					
9	10	10	10	10	6

Subjective High (1-5)	4mg/70kg Atropine	& 600mg/70kg 2-PAM Cl	
1	4	4	1
1	4	3	2
1	1	1	1
1	999	1	1
1	2	2	1
1	2	1	1
1	2	2	1
2	3	3	2
3	4	4	3
1	1	1	1
Means			
1.3	2.556	2.2	1.9
S.D.			1.5
N			1.667
10	9	10	10

Subjective High (1-5)	2mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
1	4	4	1
1	3	3	1
1	1	1	999
1	1	1	1
1	1	1	1
1	2	1	1
1	1	1	1
1	2	1	1
2	3	2	2
3	4	3	3
1	3	1	1
Means			
1.3	2.4	1.9	1.8
S.D.			1.333
N			1.2
10	10	10	9

Subjective High (1-5)	4mg/70kg Atropine	& 1200mg/70kg 2-PAM Cl	
1	4	1	3
1	5	3	1
1	1	1	1
1	1	1	1
1	2	1	1
1	1	2	1
1	2	1	1
2	3	3	3
3	4	3	3
1	1	1	1
Means			
1.3	2.4	2.3	1.7
S.D.			1.6
N			1.6
10	10	10	10

Subjective Anxiety (1-5)		Placebo			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Anxiety (1-5)		600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
2	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.9	3	3	3	3	3
S.D.					
N					
10	9	10	9	10	5

Subjective Anxiety (1-5)		1200mg/70kg 2-PAM Cl			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
2	2	3	3	3	3
3	3	3	3	3	3
3	3	3	3	4	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
2.9	2.9	3	3	3.111	3
S.D.					
N					
10	10	10	10	9	6

Subjective Anxiety (1-5)		2mg/70kg Atropine			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
2	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.8	3	3	3	3	3
S.D.					
N					
10	10	10	10	10	5

Subjective Anxiety (1-5)		4mg/70kg Atropine			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
2.9	2.9	3	3	3	3
S.D.					
N					
10	10	10	10	10	6

Subjective Anxiety (1-5)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
9	10	10	10	10	6

Subjective Anxiety (1-5)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	999	3	3	3	999
2	2	3	3	2	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	2	2	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
2.9	2.889	2.9	2.9	2.9	3
S.D.					
N					
10	9	10	10	10	6

Subjective Anxiety (1-5)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	2	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	2	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	999

Means					
3	3	2.9	2.9	3	3
S.D.					
0	0	.316	.316	0	0
N					
10	10	10	10	10	5

Subjective Anxiety (1-5)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	2	2	2	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	999	2	3	2	3
3	3	3	3	3	999
3	3	3	3	3	999

Means					
3	2.889	2.8	2.9	2.9	3
S.D.					
0	.333	.422	.316	.316	0
N					
10	9	10	10	10	5

Subjective Depression (1-5)	Placebo				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	5	5	999
3	3	3	3	3	3
3	3	3	3	3	3

Means

3	3	3	3.2	3.2	3
S.D.					
0	0	0	.632	.632	0
N					
10	9	10	10	10	6

Subjective Depression (1-5)	600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means

3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	9	10	5

Subjective Depression (1-5)	1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
3	3	3	3	3	2
3	3	3	3	3	3
3	3	3	3	4	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means

3	3	3	3	3.111	2.833
S.D.					
0	0	0	0	.333	.408
N					
10	10	10	10	9	6

Subjective Depression (1-5)	2mg/70kg Atropine				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	4	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.9	3	3	3	3	3
S.D.					
N					
10	10	10	10	10	5

Subjective Depression (1-5)	4mg/70kg Atropine				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
3	2.9	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
10	10	10	10	10	6

Subjective Depression (1-5)	2mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	2.9	3	3	3	3
S.D.					
0	.316	0	0	0	0
N					
9	10	10	10	10	6

Subjective Depression (1-5)	4mg/70kg Atropine & 600mg/70kg 2-PAM Cl				
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	2	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	2	2	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	2.9	2.9	2.9	3
S.D.					
0	0	.316	.316	.316	0
N					
10	9	10	10	10	6

Subjective Depression (1-5)	2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	999

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	10	10	10	10	5

Subjective Depression (1-5)	4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl				
3	2	2	2	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
4	3	3	2	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	2	3	2	3
3	3	3	3	3	999
3	3	3	3	3	999

Means					
3.1	2.8	2.8	2.8	2.9	3
S.D.					
N					
10	10	10	10	10	5

Subjective Coordination (1-5)			Placebo		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Coordination (1-5)			600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	9	10	5

Subjective Coordination (1-5)			1200mg/70kg 2-PAM Cl		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	1	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
3	3	2.8	3	3	3
S.D.					
0	0	.632	0	0	0
N					
10	10	10	10	9	6

Subjective Coordination (1-5)			2mg/70kg Atropine		
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	2.8	3	3	3	3
S.D.					
0	.422	0	0	0	0
N					
10	10	10	10	10	5

Subjective Coordination (1-5)			4mg/70kg Atropine		
3	1	1	2	3	3
3	3	2	2	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	2	2	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
3	3	3	3	3	3
3	3	2	2	3	999
3	3	3	3	3	3

Means					
3	2.5	2.5	2.7	3	3
S.D.					
0	.707	.707	.483	0	0
N					
10	10	10	10	10	6

Subjective Coordination (1-5)			2mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
999	3	3	3	3	3
3	2	2	2	3	999
3	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	2	2	3	3

Means					
3	2.6	2.8	2.8	3	3
S.D.					
0	.516	.422	.422	0	0
N					
9	10	10	10	10	6

Subjective Coordination (1-5)			4mg/70kg Atropine & 600mg/70kg 2-PAM Cl		
3	2	2	2	3	999
3	2	3	3	3	3
3	3	3	3	3	3
3	999	3	3	3	999
3	2	2	3	3	3
3	2	3	3	3	999
3	2	2	2	3	3
3	2	2	2	2	999
3	3	3	3	3	3
3	2	3	3	3	3

Means

3	2.222	2.6	2.7	2.9	3
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S.D.

0	.441	.516	.483	.316	0
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N

10	9	10	10	10	6
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Subjective Coordination (1-5)			2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
3	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
3	2	3	3	3	999
3	3	2	2	3	999

Means

3	2.6	2.9	2.9	3	3
---	-----	-----	-----	---	---

S.D.

0	.516	.316	.316	0	0
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N

10	10	10	10	10	5
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Subjective Coordination (1-5)			4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl		
3	2	2	2	3	3
3	2	3	3	3	3
3	3	3	3	3	999
3	2.5	3	3	3	3
4	2	2	3	2	999
3	2	3	3	3	3
3	3	3	3	3	999
3	2	1	2	2	3
3	2	2	3	3	999
3	2	2	2	3	999

Means

3.1	2.25	2.4	2.7	2.8	3
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S.D.

N

10	10	10	10	10	5
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Subjective Concentration (1-5)			Placebo		
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means					
3	3	3	3	3	3
S.D.					
0	0	0	0	0	0
N					
10	9	10	10	10	6

Subjective Concentration (1-5)			600mg/70kg 2-PAM Cl		
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
2	999	3	2	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.9	3	3	2.889	3	3
S.D.					
N					
10	9	10	9	10	5

Subjective Concentration (1-5)			1200mg/70kg 2-PAM Cl		
3	3	2	2	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	2	3	999
3	2	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means					
3	2.9	2.9	2.8	3	3
S.D.					
0	.316	.316	.422	0	0
N					
10	10	10	10	9	6

Subjective Concentration (1-5)			2mg/70kg Atropine		
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
2	2	2	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	2	2	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
2.9	2.5	2.8	3	3	3
S.D.					
N					
10	10	10	10	10	5

Subjective Concentration (1-5)			4mg/70kg Atropine		
3	3	3	3	3	3
3	3	2	3	3	999
3	3	3	3	3	3
3	1	2	2	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	2	2	4	3
3	999	3	3	3	3
3	3	2	3	3	999
3	3	2	3	3	3

Means					
3	2.667	2.5	2.8	3.1	3
S.D.					
0	.707	.527	.422	.316	0
N					
10	9	10	10	10	6

Subjective Concentration (1-5)			2mg/70kg Atropine & 600mg/70kg 2-PAM	Cl	
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	2	3	3
999	3	3	3	3	3
3	3	3	3	3	999
3	2	2	2	3	3
3	3	3	3	3	999
3	2	3	3	3	3
3	3	2	3	3	3

Means					
3	2.8	2.8	2.8	3	3
S.D.					
0	.422	.422	.422	0	0
N					
9	10	10	10	10	6

Subjective Concentration (1-5)	4mg/70kg	Atropine & 600mg/70kg	2-PAM	Cl
3	2	2	3	999
3	3	2	3	3
3	2	3	3	3
3	999	2	2	3
3	2	3	3	3
3	3	3	3	999
3	2	2	3	3
3	2	2	2	999
3	2	3	3	3
3	2	3	3	3

Means

3	2.222	2.5	2.7	2.9	3
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S.D.

0	.441	.527	.483	.316	0
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N

10	9	10	10	10	6
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Subjective Concentration (1-5)	2mg/70kg	Atropine & 1200mg/70kg	2-PAM	Cl
3	3	3	3	3
3	2	2	3	999
3	3	3	3	3
3	3	3	2	3
3	3	3	3	999
3	3	3	3	3
3	3	2	3	999
3	2	2	3	3
3	3	2	3	999
3	2	2	3	999

Means

3	2.7	2.5	2.8	3	3
---	-----	-----	-----	---	---

S.D.

0	.483	.527	.422	0	0
---	------	------	------	---	---

N

10	10	10	10	10	5
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Subjective Concentration (1-5)	4mg/70kg	Atropine & 1200mg/70kg	2-PAM	Cl
3	2	2	3	3
3	3	2	3	3
3	3	2	3	999
3	3	3	3	3
3	3	3	3	999
3	3	3	3	3
2	1	1	2	999
3	2	1	2	3
3	2	3	3	999
3	2	2	3	999

Means

2.9	2.4	2.2	2.7	2.9	3
-----	-----	-----	-----	-----	---

S.D.

N

10	10	10	10	10	5
----	----	----	----	----	---

Subjective Balance (1-5)		Placebo			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	999	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3

Means

3	3	3	3	3	3
S.D.	0	0	0	0	0
N	9	10	10	10	6

Subjective Balance (1-5)		600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	999	3	3
3	999	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999

Means

3	3	3	3	3	3
S.D.	0	0	0	0	0
N	9	10	9	10	5

Subjective Balance (1-5)		1200mg/70kg 2-PAM Cl			
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	999	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3

Means

3	3	3	3	3	3
S.D.	0	0	0	0	0
N	10	10	10	9	6

Subjective Balance (1-5)		2mg/70kg Atropine			
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	3
3	3	3	3	3	999

Means					
3	2.8	3	3	3	3
S.D.					
0	.422	0	0	0	0
N					
10	10	10	10	10	5

Subjective Balance (1-5)		4mg/70kg Atropine			
3	1	1	2	3	3
3	3	2	2	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	2	2	2	3	3
3	3	3	3	3	999
3	2	3	3	3	3
3	2	2	3	3	3
3	2	3	3	3	999
3	3	2	3	3	3

Means					
3	2.3	2.4	2.7	3	3
S.D.					
0	.675	.699	.483	0	0
N					
10	10	10	10	10	6

Subjective Balance (1-5)		2mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	3	3	3	999
3	3	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
999	2	3	3	3	3
3	2	2	2	3	999
3	2	3	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	2	2	2	3	3

Means					
3	2.4	2.8	2.8	3	3
S.D.					
0	.516	.422	.422	0	0
N					
9	10	10	10	10	6

Subjective Balance (1-5)		4mg/70kg Atropine & 600mg/70kg 2-PAM Cl			
3	3	2	2	3	999
3	2	3	3	3	3
3	2	3	3	3	3
3	999	2	3	3	999
3	2	2	3	3	3
3	2	3	3	3	999
3	3	3	3	3	3
3	2	2	2	2	999
3	3	3	3	3	3
3	2	2	2	3	3

Means					
3	2.333	2.5	2.7	2.9	3
S.D.					
0	.5	.527	.483	.316	0
N					
10	9	10	10	10	6

Subjective Balance (1-5)		2mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	2	3	3	3	3
3	3	3	3	3	999
3	3	3	3	3	3
3	2	3	3	3	3
3	2	3	2	3	999
3	3	3	3	3	3
3	2	3	3	3	999
3	2	3	3	3	3
3	3	3	3	3	999
3	2	3	2	3	999

Means					
3	2.4	3	2.8	3	3
S.D.					
0	.516	0	.422	0	0
N					
10	10	10	10	10	5

Subjective Balance (1-5)		4mg/70kg Atropine & 1200mg/70kg 2-PAM Cl			
3	2	2	2	3	3
3	1	3	3	3	3
3	3	3	3	3	999
3	2	3	3	3	3
3	2	2	3	3	999
3	2	3	3	3	3
3	3	3	3	3	999
3	2	1	2	2	3
3	2	3	3	3	999
3	2	2	2	3	999

Means					
3	2.1	2.5	2.7	2.9	3
S.D.					
0	.568	.707	.483	.316	0
N					
10	10	10	10	10	5

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